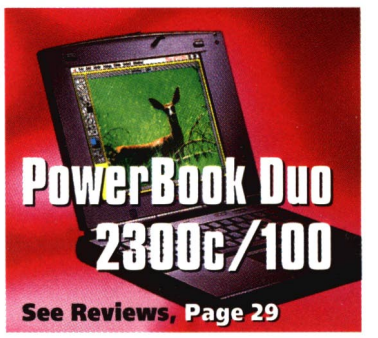
MacWEEK

03.18.96 | *The Newsweekly for Macintosh Managers* | VOLUME 10 NUMBER 11



Apple plots 1996 CPU paths

PPC 604e engine to drive Macs

By Joanna Pearlstein

Apple's CPU plans for the rest of 1996 include the first PowerPC Platform Macintosh, multiprocessor machines and making the PowerPC 604e chip standard equipment across-the-board.

In November Apple will introduce its first PowerPC Platform, or PPCP, Macintosh with the debut of a system code-named Orient Express. According to sources, Orient Express will use a 166-MHz PowerPC 604e. Although exact pricing and configu-

See 604e, Page 76

Autumn's 604e-based Mac crop

TYPE	NAME	SPEED	CONFIG.	PRICE
PPCP	Orient Express	166 MHz	16/1.2/CD/L2	$2,700
Multiprocessor	8500	Two 200 MHz	16/4/CD/L2	$6,500
	9500	Two 200 MHz	16/4/CD/L2	$6,500
Speed bump	7200	166 MHz	16/1.2/CD/L2	$2,400
	7600	180 MHz	16/2/CD/L2	$3,100
	8500	200 MHz	16/4/CD/L2	$5,400
	9500	200 MHz	16/4/CD/L2	$5,500

LERP spec to take the low road

By David Morgenstern

Apple hopes clone makers will extend the Mac's reach by LERPs and bounds. Sources said the company may offer its licensees the Low End Reference Platform, a new Mac logic board design that will incorporate many Intel-standard PC components.

The low-cost platform builds on concepts outlined in the PowerPC Platform (PPCP), which give computer manufacturers a greater range of industry-standard components on which to base their systems. However, Low End Reference Platform, or LERP, designs will differ from PPCP in that LERP-based computers will run only the Mac OS, sources said.

LERP is reportedly based on Apple's first PCI Performa logic-board (see 12.04.95, Page 1). A standard LERP design will provide either a PowerPC 603e, 603ev or 604e processor; a PS/2 keyboard port; at least one 7-inch PCI slot; ADB, LocalTalk, GeoPort and SCSI connectors; and an Enhanced IDE (Integrated Drive Electronics) hard drive interface. LERP systems will initially run System 7.5.x.

In addition, LERP-based logic boards will not require many of the Apple custom application-specific integrated circuits found in current clone designs or specified in Apple's upcoming PCI Performas, sources said. For example, a LERP Mac will use

See LERP, Page 76

MAE flowers: Version 3.0 is faster, better

By Mark Hall

While Microsoft Windows gets most of the attention in Apple's cross-platform strategy, the Macintosh Application Environment for Unix may be making the most money. And a new version should pour even more change into Apple's coffers.

Apple's emulator for running Mac software under Unix will turn 3.0 later this year. The company is also considering dipping into Windows NT's expanding pockets by porting the Macintosh Application Environment, or MAE, to Microsoft Corp.'s platform.

The feature set for MAE 3.0 is virtually complete, according to Jeff Roberts, Apple MAE product marketing manager, although a beta version remains months away.

The next release will sell for $549, with upgrades costing $199

See MAE, Page 78

Coding Java is a grind with Sun JDK, Symantec Caffeine

By Stephan Somogyi

Beta Test

Hot on the heels of Natural Intelligence Inc.'s beta release of Roaster 1.1 come two Mac-based Java development tools from Sun Microsystems Inc. and Symantec Corp. We tested both beta releases and, like Roaster, found them promising but not quite there yet.

Sun's Version 1.0 Beta 1 of its Java Development Kit (JDK) for Mac has been greeted with enthusiasm by the Java-deprived Mac populace. But the JDK alone is not going to slake the thirst of those wanting to do serious Java development on their Macs. Symantec's Caffeine builds on top of Sun's JDK to offer a more complete environment, though not quite up to the level of Roaster.

Sun's JDK is critical because it's the reference of correctness against which other Java tools will be measured. The JDK, which runs on both 680x0 and Power Macs, consists of three main parts: the javac compiler, the Applet Viewer and

See Java, Page 78

NEWSPAPER SECOND CLASS

GeoPort gets up to speed with 28.8 update, ISDN

By Joanna Pearlstein

There's good news and bad news about Apple's GeoPort. In April the first ISDN GeoPort adapter will hit the streets, but last month Apple cut short its efforts to make the high-speed serial port technology a cross-platform standard.

Next month Sat-Sagem, an ISDN and videoconferencing card vendor, will ship the Sagem-Planet ISDN GeoPort Adapter (SPIGA), an external pod for ISDN, or Integrated Services Digital Network.

In February Apple withdrew from Versit, a consortium of technology giants hoping to use GeoPort technology to integrate computers and telephones. As a result of Apple's withdrawal, Versit has announced that it has quit work on its GeoPort specifications, explaining that Apple has ceased pushing GeoPort as

See GeoPort, Page 76

While it may not be much to look at, Sat-Sagem's ISDN pod will be the first product to bring 128-Kbps speeds to the GeoPort.

Truevision brings down video prices

By Kelly Ryer

As digital video prices continue to fall, Truevision last week shipped the PCI-based Targa 1000, a lower-cost version of its Targa 2000 video-digitizing board.

"The competition is just crazy right now," said Ed Buckingham, a research analyst at International Data Corp. of Framingham, Mass. "Truevision's got a name out there; they're well-recognized on the high end. [The Targa 1000] will be great for people doing corporate presentations and training videos. It will probably spill over into the home market, too: People say, 'I'm using it at work, why can't I use it at home?'"

The $3,295 Targa 1000 has a capture rate within Adobe Premiere of 160 Kbytes per frame and supports 16-bit audio at 44.1 and 48 kHz. It supports NTSC resolutions at both 640 by 480 and

See Truevision, Page 76

"A machine we love even more than the PowerMac 7500 - the PowerWave 604"

– MacWorld February 1996 MW ★★★★ MW EDITORS' CHOICE

ORDER DIRECT

Power Computing's ***award-winning*** MacOS systems are available today ***directly*** from the factory.

Each system is ***custom configured*** to meet your exacting needs and is backed by a 30-day, "love-me-or-I'm history," money back guarantee and toll-free, lifetime technical ***support.***

Order the MacOS system you've always wanted and the way ***you want it*** from Power Computing!

CHECK OUT THESE SPECIAL OPTIONS!

Add an awesome internal Iomega Zip Drive including a 100MB Zip cartridge.

$159

Run Microsoft Windows and get full PC-compatibility by adding Insignia Solution's new SoftWindows 2.0.

$149

PowerWave 604/120 Base
120MHz PowerPC™ 604

8MB RAM (512MB Max RAM)
Optional 256K, 512K, or 1MB Cache
850MB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Desktop Computer Case
Extended Keyboard & Mouse

$2499

PowerWave 604/150 Base
150 MHz PowerPC™ 604

16MB RAM (512MB Max RAM)
512K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Tower Configuration
Extended Keyboard & Mouse

$3799

OVER $1200 OF FREE SOFTWARE
*BUNDLED WITH EVERY SYSTEM

Mac OS 7.5.2
Insignia Soft Windows 2.0 60 day trial, Grolier's Multimedia Encyclopedia, Now Utilities, Now Up-to-Date, Now Contact, Intuit's Quicken, FWB HardDisk Toolkit PE, CD-ROM Toolkit, ClarisWorks, America Online, 250 Bitstream Fonts, Launch CD, US CD Atlas, World CD Atlas, The Animals CD-ROM, Nisus Writer

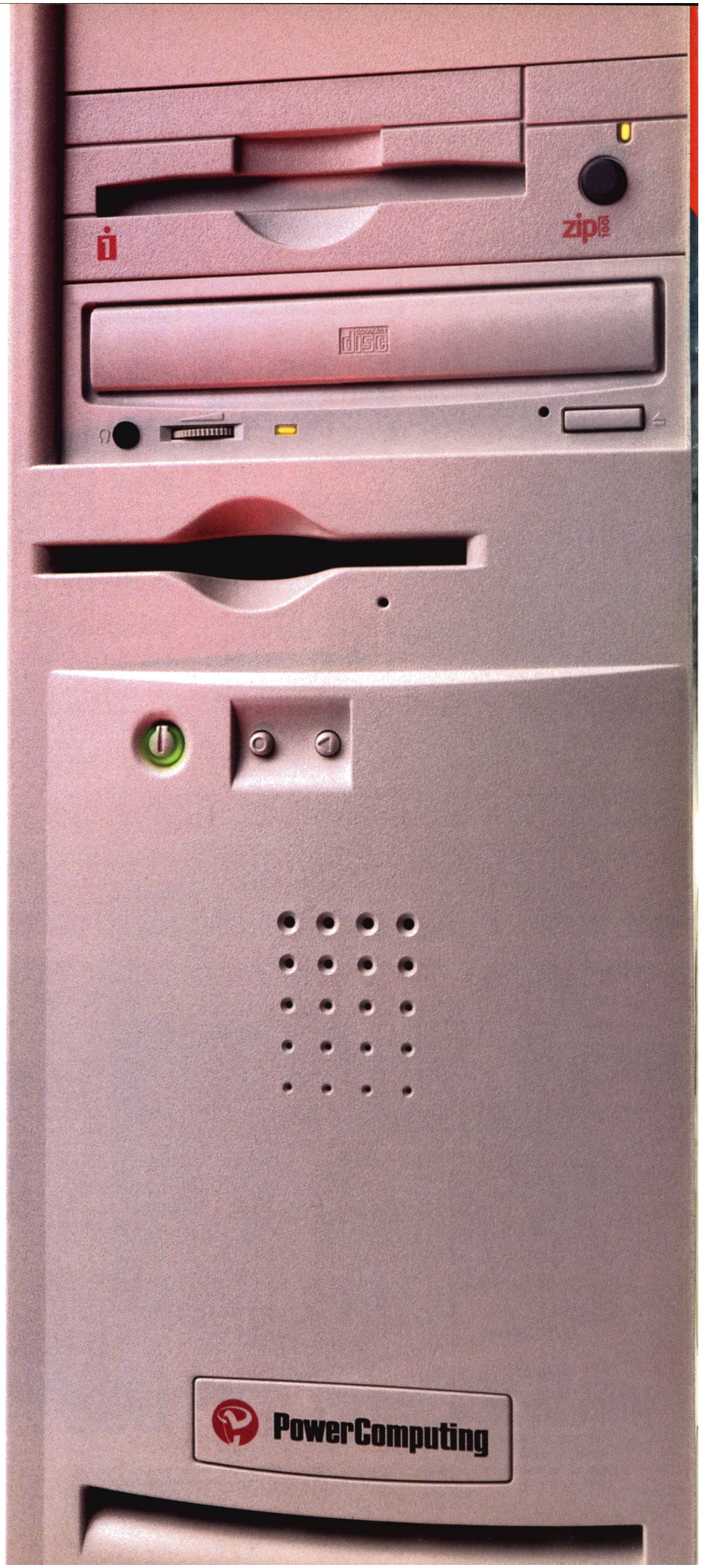
FREE

ORDER DIRECT AND SAVE

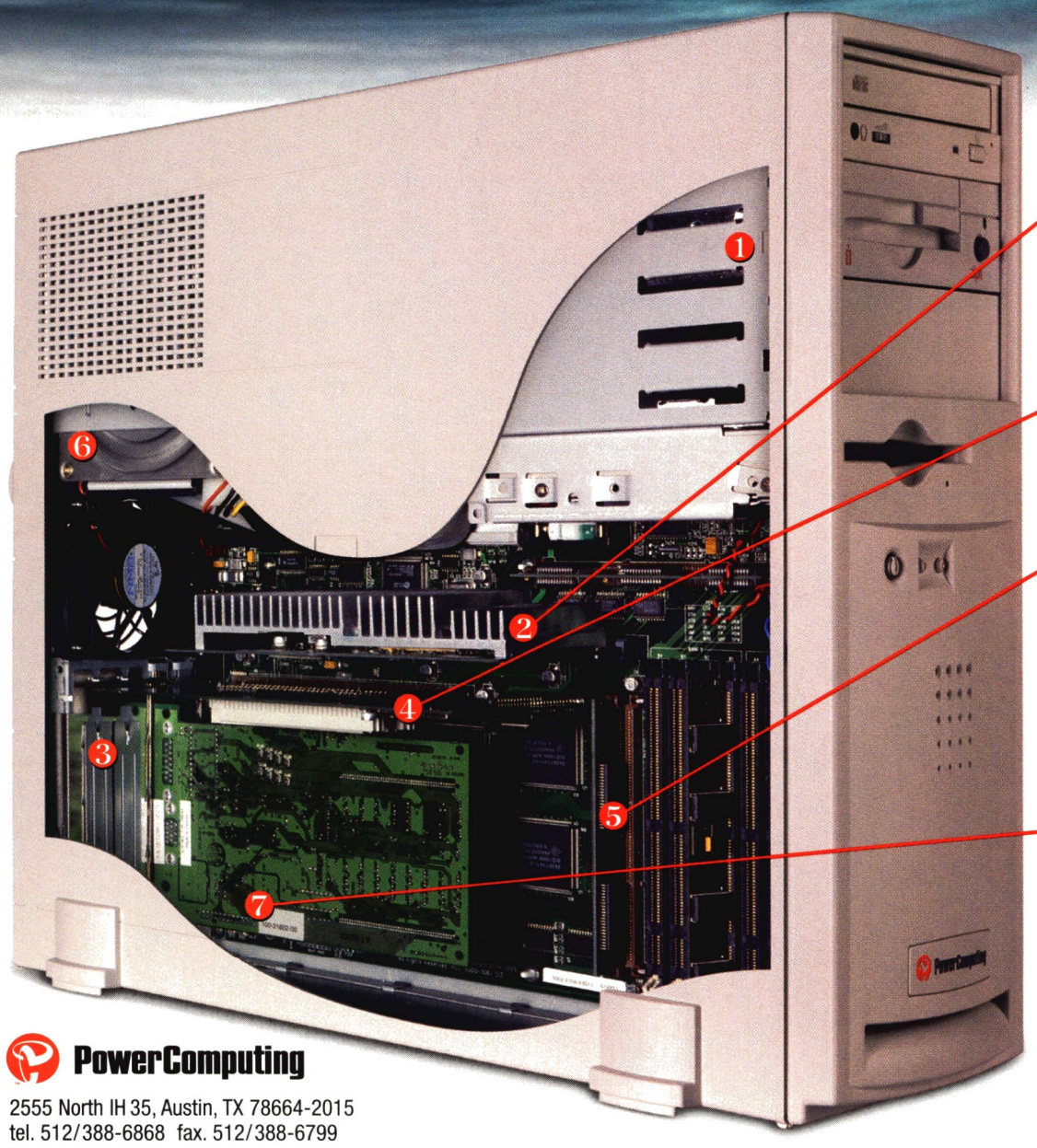
1-800-404-7693

PowerComputing

MORE POWER TO YOU™



NEW LOW PRICES!



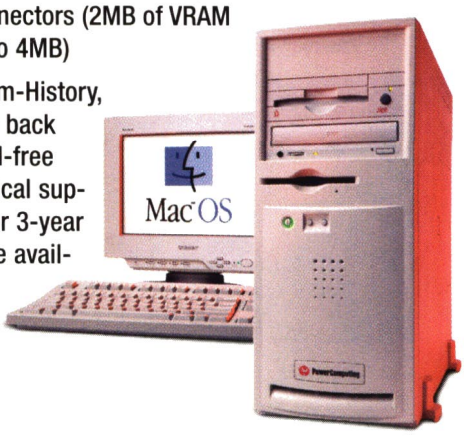
1. 3 Front Accessible Drives for optional Quad-Spin (4X) CD-ROM, Iomega Zip, Iomega Jaz, or SyQuest EZ-135
2. Easily upgradeable Plug & Play CPU daughtercards featuring the PowerPC 604 at 120, 132 and 150MHz
3. Fast PCI 3-slot expansion

   Need NuBus? Get both PCI and NuBus with Power Computing's STARGATE
4. Choose either 3 PCI slots or 2 PCI and 2 NuBus slots - allows you to reconfigure at any time from NuBus to PCI

   Eight DIMM slots for up to 512MB of RAM using 64-bit DIMMS with fast
5. interleave memory; Socketable High Performance L2 DIMM Cache Slot allows for either 256K, 512K or 1MB

   Internal Fast SCSI Bus (up to 10MBs/sec) and external SCSI Bus (up to 5MB/sec) as
6. well as Internal Drive Bays for additional storage

   Accelerated 64-bit PCI VRAM video graphics card with both Mac 15-pin
7. and SVGA connectors (2MB of VRAM upgradeable to 4MB)
8. Love-Me-Or-I'm-History, 30 day money back guarantee. Toll-free lifetime technical sup-support. 1, 2, or 3-year on-site service available, starting at only $49.



PowerComputing

2555 North IH 35, Austin, TX 78664-2015
tel. 512/388-6868 fax. 512/388-6799
Check out our Web site: **http://www.powercc.com**
Internet: info@powercc.com

Apple, Macintosh and Mac are registered trademarks, and the Mac OS logo is a trademark of Apple Computer, Inc. PowerWave is a trademark of Power Computing Corporation. All other brand or product names are the property of their respective holders. Prices and specifications are valid in the US only and subject to change without notice.

Register to win a PowerWave! http://www.powercc.com

Blow Your Mind, Not Your Budget

POWERWAVE

MacWEEK - APRIL '95

MacUser ZD LABS
MacUser - AUG. '95

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST

MW ★★★★
Macworld - AUG. '95

PC MAGAZINE LABS
PC Magazine - AUG. '95

TEST CENTER INFOWORLD HOT PICK
Infoworld - JUNE '95

Editor's Rave!

"Considering the purchase of a PowerMac?...We strongly recommend that you take a serious look at what Power Computing has to offer."
MacUser- Aug 95

"They might as well have come from Apple - the performance and compatibility are that good."
Macworld- Aug 95

"...an excellent Mac alternative, whether or not you are pinching your pennies."
PC Magazine- Aug 95

"Power Computing's systems match their PowerMac counterparts for speed and compatibility and are every bit as good as a dyed-in-the-wool Macintosh."
Infoworld- June 95

"A machine we love even more than the PowerMac 7500 - the PowerWave 604"
Macworld- Feb 96

MW EDITORS' CHOICE MW ★★★★

"The Power Computing PowerWave 604 is a very impressive Macintosh"
New York Times, November 7, 1995

PowerCurve 601/120 Starter
120MHz PowerPC™ 601+

8MB RAM (256MB Max RAM)
Optional Level 2 Cache (1MB Max)
850MB 11ms SCSI Hard Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
Built-in Graphics w/1MB VRAM upgradeable to 4MB VRAM
Extended Keyboard & Mouse

NEW! **$1799**

PowerCurve 601/120 Hot Pick
120MHz PowerPC™ 601+

8MB RAM (256MB Max RAM)
Optional Level 2 Cache (1MB Max)
850MB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
Built-in Graphics w/1MB VRAM upgradeable to 4MB VRAM
14 inch .28 DP Monitor
Extended Keyboard & Mouse

$2297

PowerWave 604/120 Base
120MHz PowerPC™ 604

8MB RAM (512MB Max RAM)
Optional 256K, 512K, or 1MB Cache
850MB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Desktop Computer Case
Extended Keyboard & Mouse

$2499

OVER $1200 OF FREE SOFTWARE
*BUNDLED WITH EVERY SYSTEM

Mac OS 7.5.2
Insignia Soft Windows 2.0 60 day trial, Grolier's Multimedia Encyclopedia, Now Utilities, Now Up-to-Date, Now Contact, Intuit's Quicken, FWB HardDisk Toolkit PE, CD-ROM Toolkit, ClarisWorks, America Online, 250 Bitstream Fonts, Launch CD, US CD Atlas, World CD Atlas, The Animals CD-ROM, Nisus Writer

FREE

PowerWave 604/132 Hot Pick
132 MHz PowerPC™ 604

16MB RAM (512MB Max RAM)
256K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Extended Keyboard & Mouse

$3499

PowerWave 604/132 MultiMedia
132 MHz PowerPC™ 604

24MB RAM (512MB Max RAM)
256K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
14 inch .28 DP Monitor
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Tower Configuration
Extended Keyboard & Mouse

$4049

PowerWave 604/150 Base
150 MHz PowerPC™ 604

16MB RAM (512MB Max RAM)
512K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
Quad-Speed (4X) CD-ROM Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/2MB VRAM
Tower Configuration
Extended Keyboard & Mouse

$3799

PowerWave 604/150 XL
150MHz PowerPC™ 604

32MB RAM (512MB Max RAM)
512K Level 2 Cache (1MB Max)
1.0GB 11ms SCSI Hard Drive
15 inch Sony Monitor
Quad-Speed (4X) CD-ROM Drive
Internal Iomega Zip™ Drive
3 Fast PCI Expansion Slots
Built-in Ethernet (10Base-T & AAUI)
64-bit PCI Graphics w/4MB VRAM
Extended Keyboard & Mouse

$5100

Service & Support

30 day money back,
Love-Me-Or-I'm-History guarantee.
Toll-free lifetime technical support.
1, 2, or 3-year on-site service available, starting at $49.

Go Configure!

Since Power Computing is the manufacturer, you can customize your RAM, hard drive, video and monitor options – just call.

ORDER DIRECT AND SAVE
1-800-404-7693

PowerComputing™
MORE POWER TO YOU.™

MacWEEK

03.18.96 VOLUME 10 NUMBER 11

4 UP FRONT

MessagePad 130 adds backlight • Apple rolls out color inkjets, scanner • Vendors patch drive problems • Pippin to ship in Japan • Windows NT for the Mac

6 NEWS

Vendors lay out new color flatbeds • New QMS workgroup printer • Newer ships PPC upgrade for PB 500 • Sony, Plasmon prep 2.6-Gbyte MO drives and jukeboxes

12 GA

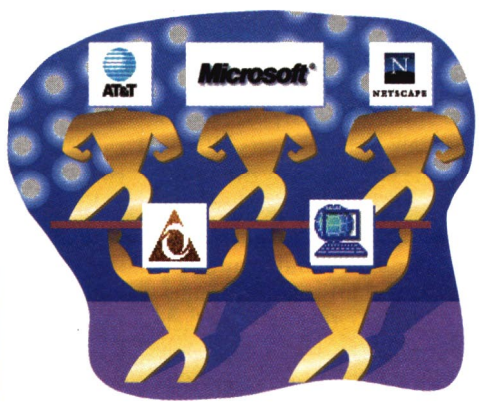
Avid system edits video on one PCI card • Point-S aims software at pre-press users • Big things in store for oversize color • Adobe sends PageMill update back to the shop

18 GATEWAYS

ISDN options aplenty in April • AOL and CompuServe sign deals with the browser leaders • Apple debuts token-ring PCI card • Navigator sparks privacy concerns

Consider the options: Three PC Cards for PowerBook 190 and 5300 users have varying degrees of success. See Reviews, Page 35.

Faster four-color output is possible with OPI servers. See Solutions, Page 41.



AOL and CompuServe join with Netscape, Microsoft and AT&T to increase their appeal. See Gateways, Page 18.

29 REVIEWS

New PowerBook Duo 2300c solid but lacks imagination • Macromedia Extreme 3D moves to multimedia • OS update breathes new life into PowerBook 5300c • Drive update • Intuit QuickBooks Pro 4.0 • Forum

41 SOLUTIONS

With OPI servers, users are getting a performance boost and improved work flow.

DEPARTMENTS & OPINION

26 Editorial
26 Second Decade
27 Letters
27 Mac Manager
41 MacInTouch
78 StockWatch
82 Mac The Knife

ALSO INSIDE

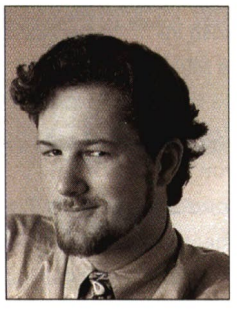
45 Mail Order
59 MarketPlace
80 Advertiser Index
80 Product Index

MACWEEK INSIDER STEPHEN HOWARD

Quaffing with Apple

Budweiser is the King of Beers, and the Wintel standard rules desktop computing. Kind of makes sense when you look at it that way, doesn't it? The Macintosh is, perhaps, the Anchor Steam or Sam Adams of personal computers, but the platform plans Apple has brewing may attract many more Joe Six-packs.

This week's details on the second generation of speed bumps for the PCI Power Macs are heartening. The revelation of a Low-end Reference Platform (LERP) project is terrific news, if Apple doesn't screw it up. And, although it's not to everyone's taste, Version 3.0 of Macintosh Application Environment (MAE) should expand Apple's influence over the stout imbibers of things Unix. Taken together, these three initiatives should greatly improve the range of the Mac OS and greatly improve Apple's appeal to more computer buyers.



Apple's apparent decision to base its mainstream Power Mac line on the PowerPC 604e chip is bold. The 604e's high clock rates look good to customers, and its variety of clock multipliers will give clone makers flexibility.

The first round of PCI speed bumps will keep Apple competitive on the crude-but-influential basis of clock rates by increasing the Power Mac 9500 and 8500 to 150 MHz (see 03.11.96, Page 1). Smarty-pants buyers may turn up their noses at judging a computer merely by its clock, but that number is almost everyone's starting point for evaluating systems. (Olde English 800 and 166-MHz Pentiums are popular for a reason.)

Intel Corp. has been beating the PowerPC troika for too long on this score. That's not going to change soon enough, but by next winter Apple will need 200-MHz systems to attract the public's attention.

By using the 604e chip, Apple and its cloners will also be able to deliver systems at a variety of prices. They'll keep clock rates high and pinch pennies on the rest of the motherboard by using slower logic chips and less expensive components — just like they do in the Wintel world. Apple's plans to sell Power Macs in the $7,000 range will provide a richer choice for those who want balanced, optimum performance; but there will also be less-expensive 200-MHz systems for the Bud crowd. That tastes great.

On the other hand, the market thirsts for something a little less filling. That's where LERP comes in. Apple should be able to achieve economy by mixing Intel-standard components with a PowerPC CPU. (If it can't, then the PowerPC Platform, or PPCP, initiative may also be seriously flawed.)

By next winter Apple will need 200-MHz systems to attract attention.

I think it makes sense for Apple to try and get the benefits of PPCP without waiting for the whole multiple operating system story to work itself out in 1997. When it does, the company will face an onslaught of low-priced PPCP competition.

What gives me a headache is the possibility that the company plans to sell this Macintosh Lite mostly to overseas OEMs. Drink deep, Apple! If you're going into the motherboard business, then you won't protect yourself or anyone else by not pushing LERP in all markets. It seems to me we've been down this road before, and we've got a Lilliputian Mac clone market to show for it.

At the opposite end of the bar sits MAE. This Mac-on-Unix software is a nifty solution to the lack of productivity software on technical workstations. Apple deserves credit for staying with this product and doing what the company does so rarely: plugging holes and making the software better with each release. I raise my glass to the team, and, in the ancient tradition of drinking partners, I have some free advice:

Create a Performa MAE. If the whole point of the product is to give the Unix proletariat access to less expensive, better applications, then why not bundle some of those programs?

I think $750 sounds reasonable for MAE with ClarisWorks, FileMaker Pro, Adobe Persuasion, and Now Contact and Up-to-Date. Not all Unix users want to brew their own Mac. □

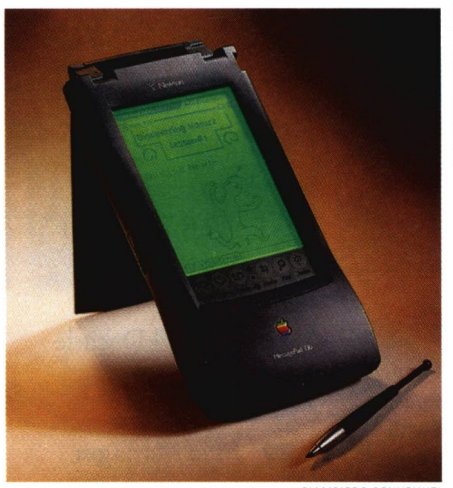
Stephen Howard is executive editor/reviews and features. He welcomes feedback and free beer at stephen_howard@zd.com.

MacWEEK (ISSN 0892-8118) is published weekly, with the exception of Jan. 1, July 1, Sept. 2, and Dec. 23 and 30, by Ziff-Davis Publishing Co., 1 Park Ave., New York, N.Y. 10016. Single-copy price, including postage: $6. One-year subscription rate: U.S., $125; Canada/Mexico, U.S. $225; International, U.S. $350 (airmail). All orders must be prepaid. Direct **subscription inquiries** to Customer Service Department, MacWEEK, c/o JCI, P.O. Box 10634, Riverton, N.J. 08076-0634; (609) 786-8230. **Changes of address** require that a new application be filled out completely and include both new and old addresses. Allow four to six weeks for processing. We periodically make lists of our customers available to carefully screened mailers of quality goods and services. If you do not wish to receive such mailings, please let us know by writing to us at Customer Service Department, MacWEEK, P.O. Box 10634, Riverton, N.J. 08076-0634. **Postmaster:** Send address changes to MacWEEK, P.O. Box 10634, Riverton, N.J. 08076-0634. Second-class postage paid at New York and additional mailing offices. Printed in U.S.A. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement No. 410667. Canadian GST registration number is R140496720.

New Newton glows in dark

By Andrew Gore

Apple last week unveiled the Newton MessagePad 130. Based on the design of the MessagePad 120, the 130 adds backlighting and a 100 percent boost in system heap.



GIAMPIERO BENVENUTI

The MessagePad 130 adds an on-demand backlight that produces a greenish glow.

The 130, which retails for $799, has a transflective LCD display with electro-luminescent backlight. The on-demand backlight uses technology similar to Timex Corp.'s Indiglo wristwatch light to deliver a greenish glow when the 130's power switch is held down.

Backlighting can be toggled on and off manually or can be set to shut off after a preset amount of time. According to Apple, using the backlight full time cuts battery life 50 percent. Under what Apple calls normal use, where backlighting is on 10 percent of the time, battery life drops about 7 percent.

The new display also has a non-reflective coating that Apple said cuts glare and increases screen life.

The other major difference between the 120 and 130 is an extra 512 Kbytes of static RAM, bringing the 130's internal RAM to 2.5 Mbytes. The extra RAM is for operating system and application processes.

The 130 will ship in early April. For more information call (800) 462-4396 in the United States; (800) 263-3394 in Canada. □

Apple outputs new color peripherals

By Matthew Rothenberg

Apple last week pumped up its color-inkjet offerings, shipped a new flatbed scanner and rolled out an EtherTalk adapter for its entire StyleWriter line.

- **The Color StyleWriter 2500,** priced at $380, replaces Apple's $429 Color StyleWriter 2400 and outputs 720 dpi in color, twice the color resolution of the 2400. The device is based on a Canon engine that prints 5 pages per minute in black and white and a CMYK page in about one minute, 20 seconds. It accommodates separate CMY and black ink cartridges and includes a serial interface and a 100-sheet multipurpose tray. A LocalTalk interface costs $105.
- **The Color StyleWriter 1500,** also based on a Canon engine, prints 720 and 360 dpi, respectively, for black and white and color. The $280 device accommodates a single CMYK or black cartridge. The printer comes with a serial interface and a 100-sheet multipurpose tray.
- **The StyleWriter EtherTalk Adapter,** priced at $189, includes 10BASE T and 10BASE 2 connectors and connects to the serial port. The adapter works with both new printers as well as older StyleWriters.
- **The Apple Color OneScanner 600/27,** which carries a street price of less than $600, captures nine bits each of RGB information per pixel in a single pass. It offers an optical resolution of 300 by 600 dpi, which can be interpolated up to 2,400 by 2,400 dpi, Apple said.

The SCSI-2 device has a scanning area of 8.5 by 11.5 inches. The Color OneScanner 600/27 ships with an Adobe Photoshop plug-in and Version 3.0 of TextBridge, Xerox Imaging Systems Inc.'s OCR software. A 20-sheet automatic document feeder is $350. □

Fixes in works for drive bug

By David Morgenstern

SCSI utility developers offered quick fixes for problems identified last week by drive vendor APS Technologies Inc. The issue can lead to data and directory corruption, the company said.

Kansas City, Mo.-based APS said the problem can occur when some third-party drivers are used with drives that have built-in RAM caches. Many recently released SCSI and Enhanced IDE (Integrated Drive Electronics) hard drives use hardware caches to improve performance; however, drives are often shipped with the write-cache disabled. Several third-party formatting utilities let users enable the write-back cache.

According to Tom Beardmore, APS technical resource manager, the cache occasionally is not cleared fully by drivers at shutdown, when the system sleeps via Apple's Energy Saver control panel or when a power failure occurs. Data left in the cache is not written to the drive and can lead to file and directory errors.

"Most caches don't flush unless specifically told to," said Vinnie Moscaritolo, an engineer with Apple's developer support services. Apple's drivers correctly synchronize caches, Moscaritolo said.

Both Apple and Quantum Corp. of Milpitas, Calif., are preparing technical documents for developers on correct handling of drive caches. Moscaritolo advised users to update both third-party and Apple drivers to the latest versions for all the drives on a system. "That's the bottom line," he said.

APS, CharisMac Engineering Inc. and FWB Inc. said they expected to post updaters to on-line services last week. Several other third-party formatter vendors said they are investigating the issue. □

Pippin specs set, due in U.S. by fall

By James Staten

Pippin, the low-cost Internet and CD-ROM Mac clone, will ship in Japan this week and is moving closer to its U.S. debut.

Bandai Digital Entertainment Inc. will unveil the device in the United States on May 15 at the Electronic Entertainment Expo in Los Angeles; sources said it will ship in the United States in September. U.S. pricing is expected to hover around $650, comparable to the Japanese price. Sources said Pippin Atworld Player is the likely U.S. title.

Pippin, which uses a standard television set as its monitor, will be powered by a 66-MHz PowerPC 603 processor and include a quadruple-speed CD-ROM drive, 5 Mbytes of RAM (expandable to 13 Mbytes), and 1 Mbyte of video RAM. It will come bundled with a 19.2-Kbps modem, at least four CD-ROM titles and an account with an as-yet-unsigned Internet service provider.

Instead of a keyboard, Pippin will have a boomerang-shaped controller, featuring a game-style direction pad, six buttons and a trackball. Expansion options include two ADB ports, two serial ports and a bottom-mounted PCI-compatible bus.

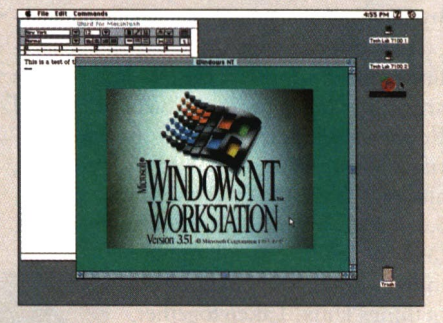
Bandai's Pippin, now available in Japan, comes with a boomerang-shaped controller.

Pippin lacks a hard drive, instead providing 128 Kbytes of flash RAM. An optional Floppy Dock Station will provide additional space.

A subset of the Mac OS will be included on each Pippin CD-ROM title. Bandai said it expects as many as 200 U.S. companies to build titles for the platform. The company has 450 developers in Japan.

Bandai Digital Entertainment Inc., the U.S. subsidiary of Bandai Ltd. Co., of La Mirada, Calif., can be reached at (310) 404-1600; fax (310) 404-1900. □

ORANGE MICRO DOES WINDOWS NT

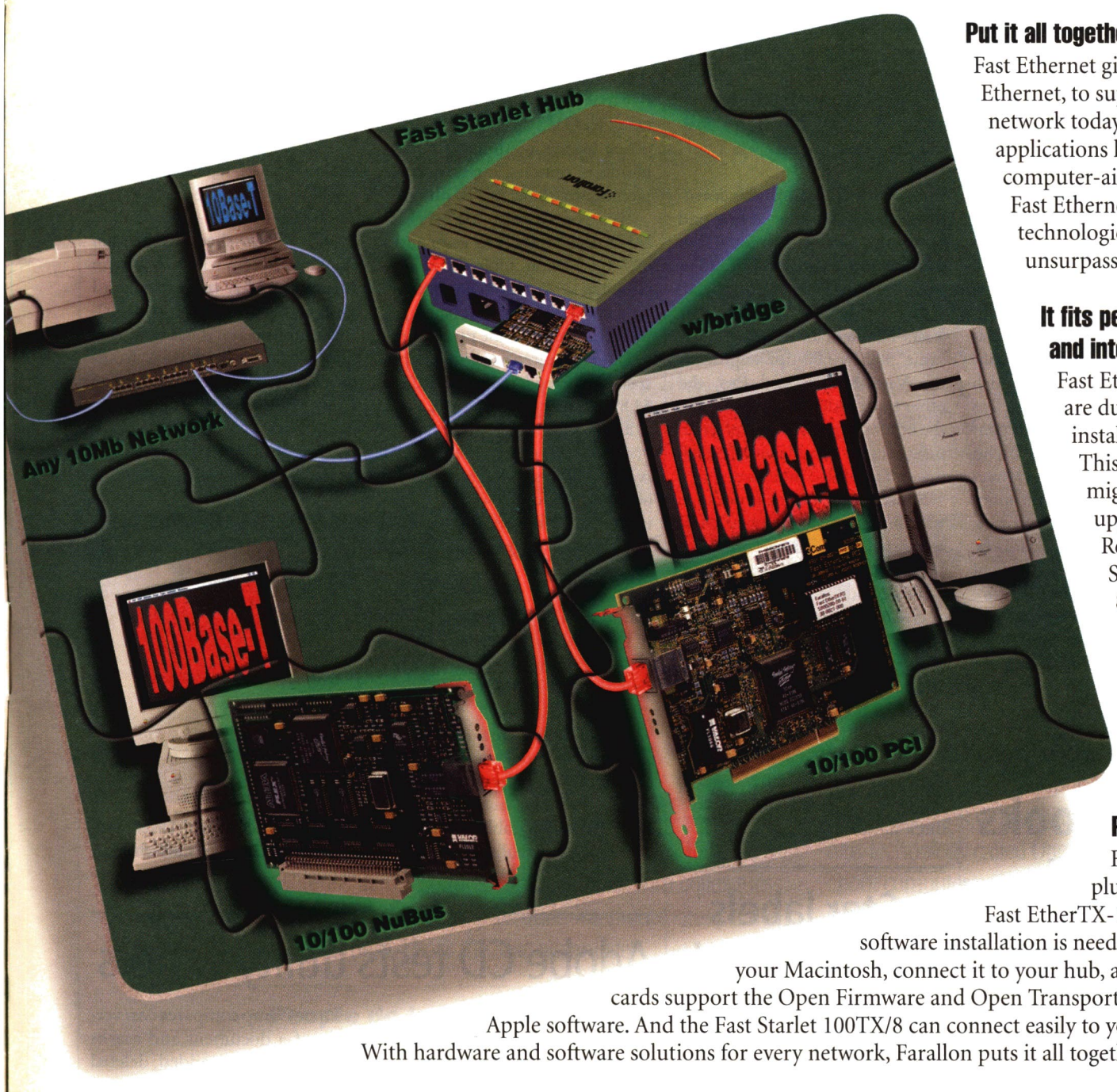


Users who want to run Windows NT on their Macs can turn to Orange Micro Inc., which is shipping a Windows NT software package for its OrangePC cards.

The $385 Windows NT for Macintosh includes Orange Micro's software and a copy of Windows NT. The product works in conjunction with Orange Micro's OrangePC cards, which use a 486 coprocessor to run the Mac OS and other operating systems — including Windows 3.1, Windows 95, OS/2, DOS and now Windows NT — simultaneously (see 09.25.95, Page 6). Pricing for OrangePC cards starts at $740. The company said it will ship PCI versions of the OrangePC cards next month.

Orange Micro Inc. of Anaheim, Calif., can be reached at (714) 779-2772; fax (714) 779-9332; sales@orangemicro.com; http://orangemicro.inter.net/orangemicro/. — By Joanna Pearlstein

Puzzled by how to speed up your network?



Put it all together with Farallon Fast Ethernet!

Fast Ethernet gives you 10 times the bandwidth of 10Mb Ethernet, to support the higher volumes of traffic on your network today. It's what you need for high-bandwidth applications like multimedia, prepress, graphic arts, computer-aided design, and imaging. Farallon's Fast Ethernet cards and hub are based on top-rated technologies from 3Com and Grand Junction, for unsurpassed 100Base-T performance.

It fits perfectly into your network, today and into the future.

Fast EtherTX-10/100™ cards for PCI and NuBus are dual-speed 10/100 adapters which can be installed on 10Base-T or 100Base-T networks. This flexibility lets you prepare for your migration to 100Base-T, so when you upgrade, your Macs will just plug and play. Ready to upgrade now? Pick up Farallon's Fast Starlet 100TX/8™. This affordable 100Mb 8-port workgroup hub has a unique built-in slot for Farallon's optional 10/100 bridge, so connecting to your 10Base-T network is a snap. This high-performance hub is the only solution that protects your network investment by integrating 10Mb and 100Mb networks.

Putting it together is easier than you think.

Farallon Fast Ethernet gives you true plug-and-play installation in moments. Fast EtherTX-10/100 cards offer built-in drivers, so no software installation is needed. Just plug the NuBus or PCI card into your Macintosh, connect it to your hub, and you're networked! Fast EtherTX-10/100 cards support the Open Firmware and Open Transport standards for compatibility with standard Apple software. And the Fast Starlet 100TX/8 can connect easily to your existing 10Base-T or 100Base-T network. With hardware and software solutions for every network, Farallon puts it all together for you—the right way.

Farallon gives you everything you need to create a Fast Ethernet workgroup that easily integrates with your 10Mb LAN.

Product	Part No.	Estimated Street Price	Available
Fast EtherTX-10/100 PCI	PN994	$249	NOW!
Fast EtherTX-10/100 NuBus	PN990	$329	NOW!
Fast Starlet 100TX/8	PN915/8-1	$1,499	NOW!
w/built-in 10/100 Bridge	PN925/8-1	$2,199	NOW!
Fast 10/100 Bridge	PN925	$999	NOW!

For more information—call today!

Ask for your free copy of Farallon's Fast Ethernet white paper.

1-800-998-7761

Farallon®

http://www.farallon.com

Mac™OS yes It runs with NetWare 3Com Parallel Tasking EZ Smart Plug & Play NETWORK

America Online and AppleLink ID: Farallon; eWorld ID: Farallon50; Internet ID: info@farallon.com;

All trademarks are the property of their respective owners. Copyright © 1995 Farallon Computing, Inc. All rights reserved.

Color flatbeds roll out

By Matthew Rothenberg

Hewlett-Packard Co., Microtek Lab Inc. and UMAX Technologies Inc. are all rounding out their flatbed scanner lines with new color models.

▶ **HP** last week introduced its $615 ScanJet 4p. The device captures eight-bit gray-scale or 24-bit-color images measuring up to 8.5 by 14 inches in a single pass. The scanner offers an optical resolution of 300 dpi, which can be raised to 1,200 dpi via software interpolation. According to HP, the ScanJet 4p can capture a monochrome or full-color image in 7.5 or 30 seconds, respectively.

The SCSI device comes bundled with Visioneer Inc.'s PaperPort software for OCR conversion and management of scanned documents. It also includes OmniPage Lite, the low-end version of Caere Corp.'s OCR package, and Adobe Photoshop LE, the limited version of Adobe Systems Inc.'s image-editing software. In addition, the ScanJet 4p ships with PictureScan 2.0, HP's own scan-automation utility, and HP ScanJet Copy, which adds copying capabilities to the scanner.

Users can buy a 50-page automatic document feeder for $559.

▶ **Microtek** last week took the wraps off the ScanMaker E6, a 30-bit-color scanner that is slated to ship this month for $599.

Hitting the streets for less than $500, the Hewlett-Packard ScanJet 4p can capture legal-size color images in a single pass.

According to Microtek, the new device has an optical resolution of 600 by 1,200 dpi, which can be interpolated to 4,800 dpi. It offers an imaging area of 8.5 by 13.5 inches. The ScanMaker E6 captures 10 bits each of RGB information per pixel in a single pass. It can scan a full-color, 5-by-7-inch, 300-dpi image in about 38 seconds, Hewlett-Packard said.

The ScanMaker E6 includes a SCSI-2 interface and features a black-masked lid designed to minimize external light contamination. It ships with Microtek's ScanWizard scanning utility, which offers full-page previews as well as a variety of image and color controls. It also comes standard with Caere Corp.'s OmniPage Direct OCR software and MicroFrontier Inc.'s Color It! 3.0 painting program. A $799 Pro version of the scanner includes Version 2.1 of Live Picture Inc.'s Live Picture image-editing application.

A transparency adapter and a 10-sheet automatic document feeder are priced at $299 and $199, respectively.

▶ **UMAX** of Fremont, Calif., this month will reportedly introduce the Vista-S6e, a low-end bundle of its Vista-S6 model that sources said will carry a street price of about $400.

According to sources, the Vista-S6e will be based on the same 300-by-600-dpi engine as the Vista-S6 LE and Pro, the other two models in the line. Like the other scanners, it will offer an interpolated resolution of 4,800 dpi and a SCSI-2 interface.

Sources said the new package will ship with Wordlinx, OCR software from UMAX subsidiary Maxsoft-Ocron Inc. of Taipei, Taiwan, and Color It!.

UMAX declined to comment on the reports.

Hewlett-Packard Co. of Palo Alto, Calif., can be reached at (800) 722-6538; http://www.hp.com.

Microtek Lab Inc. of Redondo Beach, Calif., can be reached at (310) 297-5000 or (800) 654-4160; fax (310) 297-5050; http://www.mteklab.com. □

QMS workgroup printer outputs speedy 24 ppm

Features stapler, copier options

By David Morgenstern

QMS Inc. last week introduced a speedy new entry in the competitive market for workgroup printers. The QMS 2425 Print System offers users a plethora of paper-handling options, including duplexing, collation and stapling.

Based on a new 50-MHz NEC-MIPS 64-bit RISC processor and a 600-dpi Canon tabloid-size engine, the 2425 Print System outputs up to 24 letter-size pages per minute. QMS said the printer provides two to three times the output speeds of Hewlett-Packard Co.'s $4,899 LaserJet 5Si MX (see 11.06.95, Page 1).

A $5,499 entry-level model with 8 Mbytes of RAM provides 600- and 300-dpi resolution to letter- and tabloid-size pages, respectively.

The $6,999 2425Ex comes with 24 Mbytes of RAM and an internal 256-Mbyte hard drive that outputs 600 dpi at tabloid size.

With 20 Mbytes of RAM, both models can print 1,200-dpi letter-size pages; they can output high-resolution tabloid-size pages with 36 Mbytes installed. A $599 duplexing option requires twice the memory for each page size; the printer supports up to 128 Mbytes of RAM.

The 2425 comes standard with QMS' PostScript Level 2, HP PCL 5e and HP-GL emulations and 40 Type 1 fonts. It ships with SCSI, parallel and multiprotocol Ethernet interfaces.

The printer supports a wide range of paper-handling options: a $599 envelope feeder, a $1,299 2,000-sheet input deck and a $1,499 2,000-sheet, three-bin stacker-stapler, which is due in the summer. It comes standard with a 100-sheet and two 500-sheet input trays; it has both 100- and 500-sheet output trays. In addition, it supports a $1,999 Crown Copy 300-dpi copier add-on.

QMS Inc. of Mobile, Ala., can be reached at (334) 633-4300 or (800) 523-2696; http://www.qms.com. □

The flexible QMS 2425 comes with LaserWriter and QuickDraw GX drivers, which support booklet printing.

PowerBook 500 notebooks gain Newer PPC upgrade

By Joanna Pearlstein

Bringing the PowerPC chip to PowerBook 500 owners, Newer Technology Inc. recently shipped its NUpowr PowerPC upgrade.

The daughtercard upgrade places a 117-MHz PowerPC 603e processor in PowerBook 500 series laptops. Newer said the NUpowr comes in three configurations with varying amounts of installed RAM: a $670 bare board with no additional memory, and 4- and 8-Mbyte versions, which carry street prices of $875 and $1,070, respectively.

Newer said it will pay users $80 for the 68LC040 processors that the upgrade replaces.

The NUpowr requires Revision C of the PCMCIA Expansion Module for the PowerBook 500 series, as well as the PowerBook system software update (see 01.15.96, Page 1), which comes with the kit. Connectix Corp.'s Speed Doubler is also bundled with the cards.

"I have seen a real performance increase," said NUpowr owner Dan Flynn, chief operating officer at Pioneer Balloon Co. in Wichita, Kan.

Newer Technology Inc. of Wichita, Kan., is at (316) 685-4904 or (800) 678-3726; fax (316) 685-9368; sales@newertech.com; http://www.newertech.com. □

For the record

In the 03.04.96 Solutions (Page 37), Paul Sereiko was incorrectly identified as an Apple spokesman. Sereiko is vice president of corporate marketing with SystemSoft Corp. of Natick, Mass.

CoStar labels via HyperCard

CoStar Corp. this week will offer users HyperCard external commands for its pint-sized LabelWriter XL and LabelWriter XL Plus thermal printers.

The $99 software boosts productivity by letting users print labels within a stack without changing the Chooser printer settings for attached page printers, the company said.

The software lets users adjust text position, fonts, type size and styles as well as spool jobs and print in the background. External commands for ACI US Inc.'s 4th Dimension and Blyth Software Inc.'s Omnis 7 cost $99 each.

CoStar Corp. of Greenwich, Conn., can be reached at (203) 661-9700 or (800) 426-7827; fax (203) 661-1540; macdev@costar.com. □

Adobe CD tests utility waters

By Kristin Balleisen

Adobe Systems Inc. this month released Adobe File Utilities, a new suite of cross-platform applications for converting, viewing and comparing documents.

Starting at $149 for a single-user CD-ROM, the suite includes three programs previously offered as stand-alone products from Scottsdale, Ariz.-based Mastersoft Inc.: Word for Word, DocuComp and Viewer.

Word for Word is a cross-platform conversion utility for Mac, Windows 3.1, Windows 95, DOS and Unix platforms. The program supports about 250 file formats, including GIF, TIFF and HTML, as well as formats for WordPerfect, Microsoft Word and Excel, Adobe said.

DocuComp compares two versions of a document and marks text that has been added, deleted or edited.

The suite offers Mac, Windows and Windows 95 versions. The Mac version currently supports ASCII, Word and WordPerfect file formats.

Viewer handles a variety of graphics file formats. It currently supports Windows; a Mac version is due by year-end.

Users of Mastersoft's stand-alone utilities can upgrade to the Adobe CD-ROM for $39.95; a five-user license is $379.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400 or (800) 624-6107; fax (415) 961-3769; http://www.adobe.com. □

Chances are
we've helped your business.
(Even if you've never owned a Macintosh.)

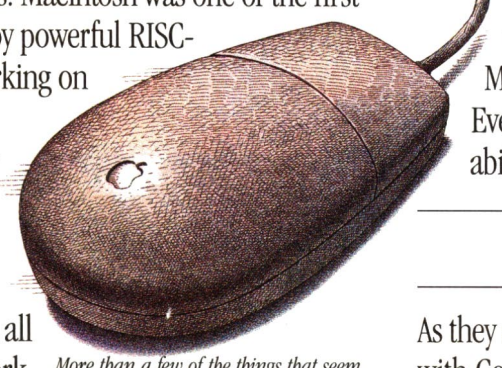
Back in 1984, a young company named Apple Computer did a rather remarkable thing. It introduced a new way of computing. A new way of getting things done.

A new way named Macintosh.®

Sure, personal computers had been around for a while. But never before had one computer so completely, so instantly, changed the landscape of the possible.

Making the extraordinary ordinary.

In the 12 years since, Apple® innovations have continued to redefine what people can do with a personal computer. They've also found their way into some of our competitors' PCs and operating systems. For example, the plug-and-play technology we brought to market in 1987 is just now becoming a reality for other PC makers. Macintosh was one of the first affordable desktop computers to employ powerful RISC-based microprocessors. (We're now working on the fourth-generation PowerPC™ RISC chip.) And we're still the only company in the world making a computer that runs both the Mac™ OS and Windows.*



More than a few of the things that seem standard on a personal computer today were pioneered by Apple.

As a result of these Apple innovations, ordinary people can sit down at all kinds of PCs and actually get some work done. Of course, if they sit down at a Macintosh, they can build 3-D graphics. Use virtual reality in very real ways. Videoconference across continents. Collaborate with colleagues on the far side of the corporate campus. Build interactive sites on the World Wide Web. And more. That's the Mac advantage.

People do know the difference.

Today, 56 million people do their work the Macintosh way. Some in school. Some at home. And, when you look at the numbers from recent studies, quite a few in business. We command a 47% share of the U.S. commercial publishing market. And 76.2% of the color pre-press market. And though our dominance in graphics-related businesses may not shock you, consider this: we have a 50% share of the chemical, pharmaceutical, biotechnology, scientific and engineering computing markets.

And then, there's the fact that Macintosh brand loyalty is the highest of any PC in the world: 90% of Macintosh customers buy a Mac the next time around. Which leads people like Andrew Laham, MIS Director at the law firm Fleming, Hovenkamp & Grayson, to say, **"***There would be a major crisis if we had to do without Macs. In fact, there would be an open revolt.***"** Indeed, if the mail we've received lately is any indication, more than a few CFOs out there would revolt, too, if their companies didn't use Macintosh computers.

"*NASA saved $800,000 a year on maintenance alone when we replaced their legacy system with a Macintosh system,***"** says Steve Monteith, a member of the Research Triangle Institute TechTracS Team.

And if you replace a Windows system with a Mac? According to a recent study by the Gartner Group, technical support costs for Macintosh tend to be 25% lower than support costs for Windows.** Even *PC World* magazine ranked Apple as one of the best for reliability and service among all makers of personal computers.

See the future. Turn on a Mac.

As they say, you can't simply rest on your laurels. So what's next? Let's start with Copland, our upcoming operating system†. Copland won't just change the look of the Macintosh desktop; it will incorporate an entirely new technology called OpenDoc® that will change the way you think about computers. (Sound like hype? Check out *InfoWorld*—they named OpenDoc the winner of the 1995 Landmark Technology Award.)

And then there are the 53 new software patents we were awarded in 1995, patents on everything from wireless communication, power management and manufacturing systems to data encoding, data compression and encryption. That's more than enough innovation to bring another generation, or three, of intelligent business tools to market.

The kinds of tools that keep your productivity up. Your costs down. The kinds of tools that keep your people motivated to push the limits. To challenge the unknown. To discover the unexpected. And bring it to market. You know, the same things we keep doing with Macintosh. Year after year.

Apple®

http://always.apple.com

*The Power Macintosh® 6100/66 DOS Compatible runs the Mac OS and Windows 3.1. **To receive a copy of the Gartner Group study "Technical Support Costs in Dual-Platform Computing Environments," call 1 800 232-9335. † Don't look for a product named Copland at your local reseller. It's only a code name for our soon-to-be-released operating system. Substantiation for claims made in this ad on file with Apple Computer, Inc. ©1996 Apple Computer, Inc. All rights reserved. Apple, the Apple logo, Macintosh, OpenDoc and Power Macintosh are registered trademarks of Apple Computer, Inc. Mac is a trademark of Apple Computer, Inc. PowerPC is a trademark of International Business Machines Corporation, used under license therefrom. All Macintosh computers are designed to be accessible to individuals with disability. To learn more (U.S. only), call 800-600-7808 or TTY 800-755-0601.*

Pair ship 2.6GB MO drives

By David Morgenstern

Plasmon Data Inc. and Sony Electronics Inc. are entering the market with 2.6-Gbyte magneto-optical drives and jukeboxes.

The drives use new ISO-standard 2.6-Gbyte media as well as older 1.3-Gbyte and 650-Mbyte 5.25-inch cartridges.

Sony in April will ship two branded drives based on its SMO-F541 OEM mechanism. Both drives have spindle speeds of 3,600 rpm and offer a sustained data transfer rate of 4 Mbytes per second. The $2,440 CMO-R540-10 model uses a 1-Mbyte RAM buffer, and the $3,070 CMO-R540-40 has a 4-Mbyte buffer. Both drives use S-Cache technology, which reduces head movement and boosts performance, Sony said.

Plasmon's recently released $1,899 Cheetah and $2,575 Cheetah Plus MO drives are based on MOST mechanisms. The Cheetah has a 1,900-rpm spindle speed and a sustained data transfer rate of 2.1 Mbytes per second, Plasmon said. The Cheetah Plus has a spindle speed of 3,600 rpm and a sustained data transfer rate of 4 Mbytes per second.

The drives come with Software Architects Inc.'s FormatterOne Pro storage software and DOS Mounter file-exchange utility. Internal versions of both drives cost $100 less than the external models.

In addition, Plasmon this month released a line of Cheetah MO jukeboxes with capacities from 52 to 670 Gbytes.

A $7,995 entry-level jukebox holds 20 cartridges and uses a single drive and picker. A high-end configuration with 258 slots, two pickers and a pair of drives is $53,000; the device supports up to six drive mechanisms.

While not bundled with Mac software, the jukeboxes are compatible with driver software from MacPeak and Software Architects, Plasmon said.

In other news, Plasmon recently offered pre-press users a 45-day test drive of its PD/CD drive, which handles both quadruple-speed CD-ROMs and 650-Mbyte Phase-change Dual cartridges. During the promotion, the drive is priced at $551 and a 10-pack of media is $590. Further information on the offer is available at (800) 445-9400, Ext. 3002.

Sony Electronics Inc. of San Jose, Calif., is at (408) 432-1600 or (800) 352-7669; http://cons3.sel.sony.com/SEL/ccpg/index.html.

Plasmon Data Inc. of San Jose, Calif., can be reached at (408) 474-0100 or (800) 445-9400; fax (408) 474-0111. □

We Have Stock For Immediate Shipment
Iomega's 1 GB • 5400 RPM
12 ms • Winchester Drive
Transfer Rate up to 5.5 MB/s
For Pre-Press and Photoshop
Jaz
For Macintosh Includes Cartridge
Internal - $545
Includes Bezel For The 840-8100-8500-9500 Only
External - $595
Built in a ProMax Cabinet With Built-In Power Supply
1 GB Carts - $109 ea
2 GB Jaz Array - $1295
4 GB Jaz Array - $2395
Fast/Wide SCSI Host Adapters For Video Editing Optional
ProMax Offers Wide Disk Arrays From 2 to 96 GB
Compatible With VideoVision, Targa2000, and Media 100
CD-R
Philips CDD-2000 Third Generation System
2x Recorder + 4x Reader
External With Toast Pro $995
Internal With Toast Pro $895
Combo CD-R + Jaz $1495
Premium CD-R Media Low as $7.99
Call For Information or to Place Order
(714) 727-3977 • 1-800-977-6629 • FAX: (714) 727-3546
We Ship FedExpress • Credit Cards Accepted
proMAX
16 Technology Drive · #106 • Irvine, CA 92718
Trade names and are the property of their respective owners

Seagate jumps drive to 23GB

By David Morgenstern

Seagate Technology Inc. recently took the wraps off its Elite 23, a single drive with a capacity of 23 Gbytes.

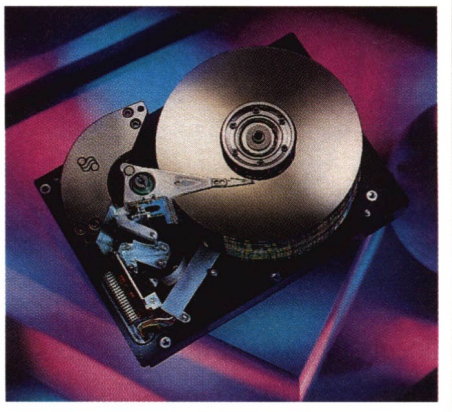
The highest-capacity member of the Elite OEM line, aimed at server and digital video applications, is expected to be released in the third quarter, according to the Scotts Valley, Calif.-based company. Although final pricing is not set, Seagate said it expects the drive to cost between $4,250 and $4,400.

The mechanism will offer an average seek time of 13 milliseconds and provide sustained data transfer rates of 8 to 12 Mbytes per second, Seagate said. The 14-platter drive uses an embedded-servo system that improves sustained data performance by reducing the need for thermal recalibration.

The Elite 23 will have a 5,600-rpm spindle speed and use a 2-Mbyte adaptive cache. The forthcoming drive will include either Fibre Channel Arbitrated Loop or eight- or 16-bit Ultra SCSI interfaces.

According to the company, the new Elite will have an MTBF (mean time between failure) of 800,000 hours.

In addition, Seagate will release OEM drives with Fast ATA-2 interfaces in the second quarter. □



Seagate's forthcoming Elite 23 packs 23 Gbytes on 14 platters stacked like flapjacks.

MicroNet DataDock spans platforms

By David Morgenstern

MicroNet Technology Inc. this month will improve cross-platform support for its DataDock modular storage system and deliver two new drives.

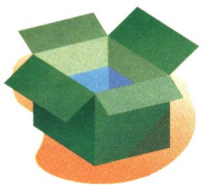
The company is slated to release new DataDock file-transfer software for Mac, Windows 3.1, Windows 95 and Unix platforms. The software will let users mount hard drive modules and other removable media regardless of format. The new version will handle file-name conversion automatically, MicroNet said. A DataDock purchased with the software will cost $930; current users can upgrade for $195.

In other news, MicroNet will offer DDram, a new RAM-based solid-state drive module for DataDock 525 systems. The 5.25-inch unit will sport capacities ranging from 192 to 832 Mbytes. Although final pricing is not set, MicroNet expects the RAM drive to cost about $100 per megabyte. The module will offer an average access time of 0.02 milliseconds and a sustained data transfer rate of 40 Mbytes per second with the company's 16-bit Ultra SCSI PCI card, MicroNet said.

The company will also release a 2.6-Gbyte magneto-optical drive. The $2,995 SB-TMO-2600 offers average read and write data transfer rates of 3.3 and 1.6 Mbytes per second, respectively. It has an average access time of 39 milliseconds, MicroNet said.

MicroNet Technology Inc. of Irvine, Calif., is at (714) 453-6100; fax (714) 453-6101; http://www.micronet.com. □

STORAGE BEAT



FWB unleashes HSM. FWB Inc. of Menlo Park, Calif., recently shipped its HSM ToolKit, which offers entry-level hierarchical storage management for Macs.

The $79 software lets users of individual Macs and AppleShare servers transfer files automatically to a removable-media drive. The software sets rules for the movement of files to and from the external drive; users can also set "anchors" to selected applications and files so they always stay on the primary hard drive (see 09.11.95, Page 6).

In other news, FWB recently trimmed the cost of its hammerCD-R 4x CD-Recordable authoring system. Previously $3,099, the drive has a new price tag of $2,159; it comes with Astarte GmbH's Toast CD-ROM Pro authoring software. Phone (415) 833-4616; fax (415) 833-4655; sales@fwb.com; http://www.fwb.com.

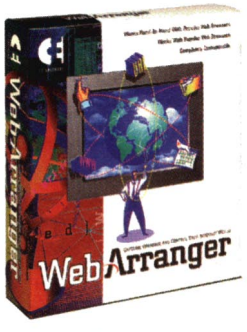
Procom cuts CD-R costs. Procom Technology Inc. of Irvine, Calif., recently lowered prices of its CD-R drives by up to 50 percent. Formerly $3,865, Procom's quadruple-speed recorder is now $1,699; the 2x version is $999, down from $1,375. The drives do not come with authoring software, but Procom offers Optical Media International's QuickTOPiX software for $249. Phone (714) 852-1000 or (800) 800-8600; fax (714) 852-1221; http://www.procom.com.

Hard-rocking SCSI. Granite Digital of Union City, Calif., recently filled out its SCSI accessory lines with models sporting MicroD connectors. Providing active termination and line-diagnostic display, Granite's SCSIVue terminator is now available with 50- or 68-pin MicroD connectors that cost $79 and $99, respectively. New 3-foot SCSIVue cables with both a 25-pin Mac SCSI and a 50-pin MicroD plug are $69 each. Phone (510) 471-6442; fax (510) 471-6267.

— By David Morgenstern

Your WEB — Your WAY

Accelerated for Power Macintosh



There's a world of information at your fingertips, and until now, no easy way to control it. Your Internet world — that personal collection of sites that defines who you are and what matters to you. With WebArranger™, you can capture, organize and control your Internet world.

WebArranger works hand in hand with your Web browser and other Internet applications. Its agent technology checks important web sites or pages and notifies you of changes. It automatically downloads pages or entire sections of the Web for later viewing off-line. It grabs just about any kind of data on the fly: graphics, text, URLs, E-mail addresses, etc. Want it? Grab it! Then annotate it, link it, and organize it.

Mac OS

Do you have more bookmarks than you know what to do with? Import them. WebArranger then allows you to title, store, arrange, and even launch your URLs from easy-to-understand hierarchical file folders. And that's just the beginning. With WebArranger's customizable, object-oriented, "capture-and-organize-anything-anywhere" functionality, you'll wonder how you ever surfed without it.

CAPTURE, ORGANIZE AND CONTROL YOUR INTERNET WORLD

WebArranger

Control your Internet world for the limited introductory price of $79. Call 800 523-7638 (program CE2040) today, or visit CE Software at http://www.cesoft.com.

Offer Expires 3/31/96 © 1996 CE Software, Inc. CE Software, the CE Software logo, and WebArranger are trademarks of CE Software, Inc. All other brand or product names are trademarks or registered trademarks of their respective holders.

CE SOFTWARE

in

here

you

work

miracles

©1995 Microsoft Corporation. All rights reserved. Microsoft Office, shown here, includes: Word, Microsoft Excel, the PowerPoint presentation graphics program and a workstation license for Microsoft Mail (server and software acquired separately). For information only: in the 50 United States and Canada, call (800) 531-6748. Outside the U.S. and Canada, call your local Microsoft subsidiary or (206) 936-8661. Customers can reach Microsoft text telephone (TT/TDD) services by calling (800) 892-5234 in the U.S. or (905) 568-9641 in Canada. Microsoft and PowerPoint are registered trademarks and *Where do you want to go today?* is a trademark of Microsoft Corporation. Power Mac is a trademark of Apple Computer, Inc.

TAKE CONTROL

In here

You

Your Power Mac™

And Microsoft® Office

Become one.

YOU ARE AN IDEA FACTORY

You assemble your thoughts

Effortlessly.

You drag

Words tables

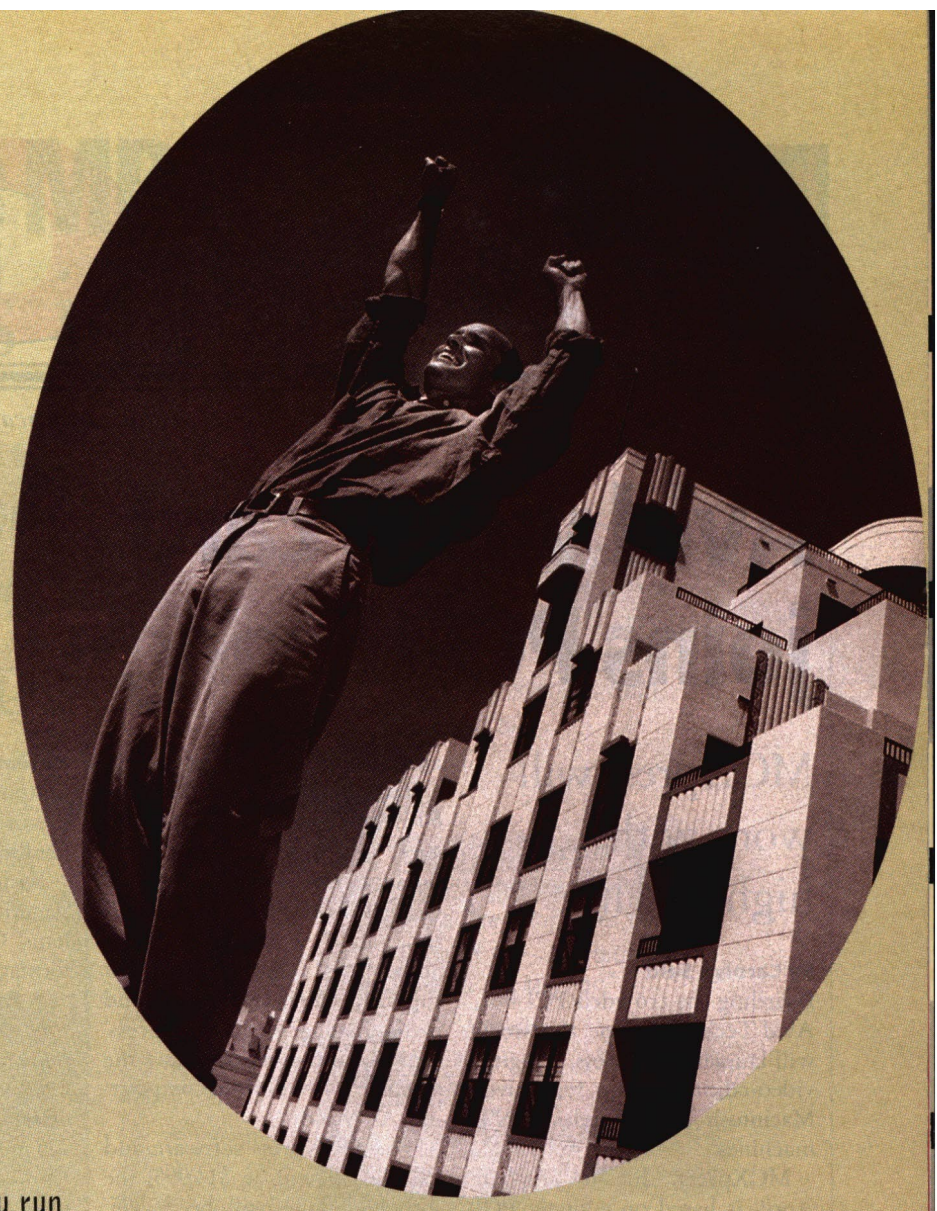
Charts graphics

From one program

And drop them

Into another

Instantly.



IDEAS BEGIN TO FORM

You run

Microsoft Excel calculations

In your Word document.

You turn your Word document

Into a PowerPoint®

presentation.

You see everything

Come together.

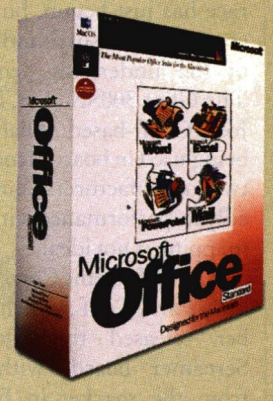
Seamlessly.

GO AHEAD

Make something.

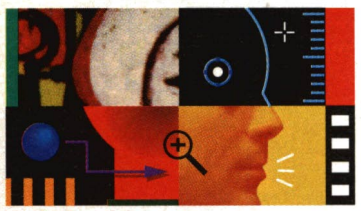
Make anything.

This is you. Working.



Microsoft®

WHERE DO YOU WANT TO GO TODAY?™



GA

MACS HOLD NICHE

Griffin Dix Research Associates finds that Macs account for 80 percent of all computers used for color publishing jobs.

Avid video card joins PCI throng

MCXpress will work with high-end line

By Carolyn Said

Boarding the crowded PCI bus, Avid Technology Inc. this week will launch MCXpress, a digital video-editing system for Power Macintosh and Windows NT machines.

MCXpress, due to ship in April, is based on a single PCI card. It will replace the company's $7,995 Media Suite Pro product, which used four NuBus cards.

Unlike Media Suite Pro, MCXpress will be fully compatible with Avid's higher-end Media Composer line, which sells for $30,000 to $100,000. Avid said users will be able to start a project in MCXpress, for example, then seamlessly transfer it to Media Composer to add real-time effects. MCXpress will also come with a QuickTime compressor-decompressor, allowing users to employ QuickTime effects packages, such as Adobe After Effects.

The product will display 60-field, 732-by-486-pixel images, making it suitable for broadcast applications, Avid said. Other features will include real-time audio equalization, four audio tracks, edit-decision-list support, batch digitizing and media management. MCXpress' four video tracks will allow the system to offer built-in compositing, Avid said.

The MCXpress software and PCI board will be $14,995; the software alone will be $6,995. Avid will also offer a $29,995 turnkey system that packages the hardware and software with a Power Mac 8500 sporting 48 Mbytes of RAM, a 1-Gbyte hard drive and a 17-inch monitor. Owners of Media Suite Pro will be able to buy MCXpress software and hardware for $5,000.

The company is also planning an April debut for PCI versions of its Media Composer line.

Avid Technology Inc. of Tewksbury, Mass., can be reached at (508) 640-6789 or (800) 949-2843; fax (508) 640-1366. □

Kodak, Epson, NewGen prep big inkjets

By Matthew Rothenberg

Output vendors have big things in store for Mac users in the market for oversize color.

Eastman Kodak Co., Epson America Inc. and NewGen Systems Corp. all unveiled large-format inkjet printers in February.

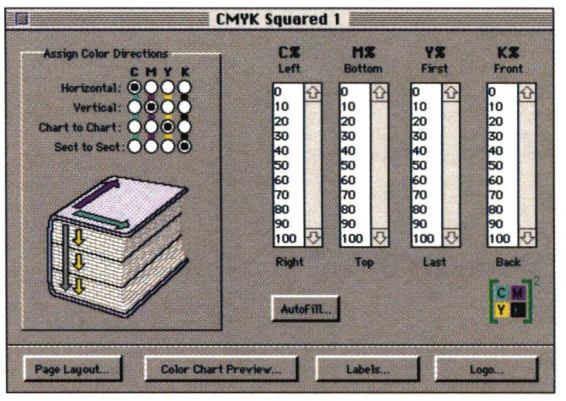
▶ **Epson** unveiled the Stylus 1500, a $995 color inkjet with a maximum printing area of 13.6 by 21.78 inches. The CMYK printer offers a maximum resolution of 720 by 720 dpi and accommodates 17-by-22-inch cut sheets or continuous forms measuring up to 16 inches wide. The printer ships standard with a bidirectional parallel interface; LocalTalk or Ethernet interfaces can be bought for $149 or $499, respectively. The Stylus 1500 includes a 100-sheet input tray and a 30-sheet output tray.

▶ **Kodak** announced plans to deliver the Kodak Digital Science 1000 PS in the second quarter for $12,995. The printer will be based on Hewlett-Packard Co.'s DesignJet 755CM (see 09.25.95, Page 14).

The device will combine the 755CM's engine with Kodak Precision Software. It will use CMYK ink cartridges and output 300-dpi PostScript images ranging from 8.5 by 11 inches to 3 by 9 feet on roll-fed coated paper or film. It will be able to print a 2-by-3-foot color print in 8 to 37 minutes.

The 1000 PS will include Post-

See Inkjets, Page 16



CMYK Squared will let pre-press users improve the accuracy of their color output by building their own four-color process-tint charts.

Point-S apps target pre-press market

By Kristin Balleisen

Point-S Inc., creator of Adobe PressWise, in February announced two new offerings for the high-end pre-press market.

ImagePoint 1.1, available for $595, is the first retail version of the company's print-automation software. The product was previously available only through OEMs.

The company said the software lets users drag and drop any continuous-tone image into a "hot" folder that monitors and prints the file to any PostScript device; this method lets users bypass printing from an image-editing or page-layout program, the company said.

Users can "gang process" up to 144 images per page for scatter proofing or print images one at a time; the software lets users define three independent output configurations, Point-S said. ImagePoint lets users print jobs to three output devices simultaneously.

ImagePoint lets users label each image for identification. Users can also add crop and registration marks within the application.

Point-S said ImagePoint 1.1 supports PostScript Level 2 in RIP separations as well as Luminous Corp.'s Color Central Open Prepress Interface image-replacement servers. It supports TIFF, Desktop Color Separation, EPS and Scitex CT file formats.

The company said a limited edition of ImagePoint 1.1 will be bundled with Fuji Photo Film U.S.A. Inc.'s FirstLook proofer.

Point-S also announced plans to deliver CMYK Squared 2.0 in the second quarter. The $119 software package will let users build customized process-color charts.

Aimed at the on-demand printing market, CMYK Squared 2.0 will add custom page footers, which can include EPS graphics, a slug line and automatic page numbering, the company said.

See Point-S, Page 16

Chip sparks controversy for QuickDraw 3D cards

By Kelly Ryer

The QuickDraw 3D accelerator race has just begun, but already controversy is surrounding some of the underlying technology. The Glint 300SX chip, from San Jose, Calif.-based 3Dlabs Inc., is being used in boards from at least two manufacturers, but reportedly its performance with texture mapping is not ideal.

YARC Systems Corp. of Newbury Park, Calif., which in October released the Glint-based Screamer board, withdrew it from the market in February. Meanwhile, Newer Technologies is readying a board based on the same Glint chip.

YARC cited several problems with the $995 Screamer, but mostly pointed to the board's poor handling of textures in QuickDraw 3D. "It just didn't handle texture mapping well," said YARC CEO Trevor Marshall. "It wasn't performance you should expect from a YARC board."

Neil Trevett, 3Dlabs vice president of marketing, said: "The chip's original market was CAD on the PC. The Mac market is different — people focus on animation and authoring, and that means textures. [The 300SX] was never

See 3-D cards, Page 16

StrataType 3d goes native, drops price

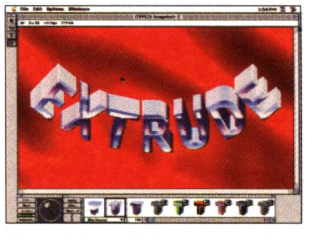
By Kelly Ryer

Just when you think all graphics applications must finally be Power Mac-native, along comes another one: StrataType 3d 2.5. Besides bringing its 3-D type program up to RISC speeds, Strata Inc. has cut the price of the software by almost two-thirds.

StrataType 3d 2.5 is available now for $49, down from $149 for previous versions. Besides the native code and the price cut, the new version is identical to its predecessors, Strata said.

StrataType 3d lets users turn 2-D text into 3-D type. In addition, users can import or extrude vector graphics in PICT or EPS format into 3-D forms.

Once the text is three-dimensional, users can add beveled edges, apply lighting effects and textures, and bend or stretch the type. StrataType 3d's alpha-channel support lets users composite their 3-D text with graphics in image-editing programs such as Adobe Photoshop or Fractal Design Corp.'s Painter.



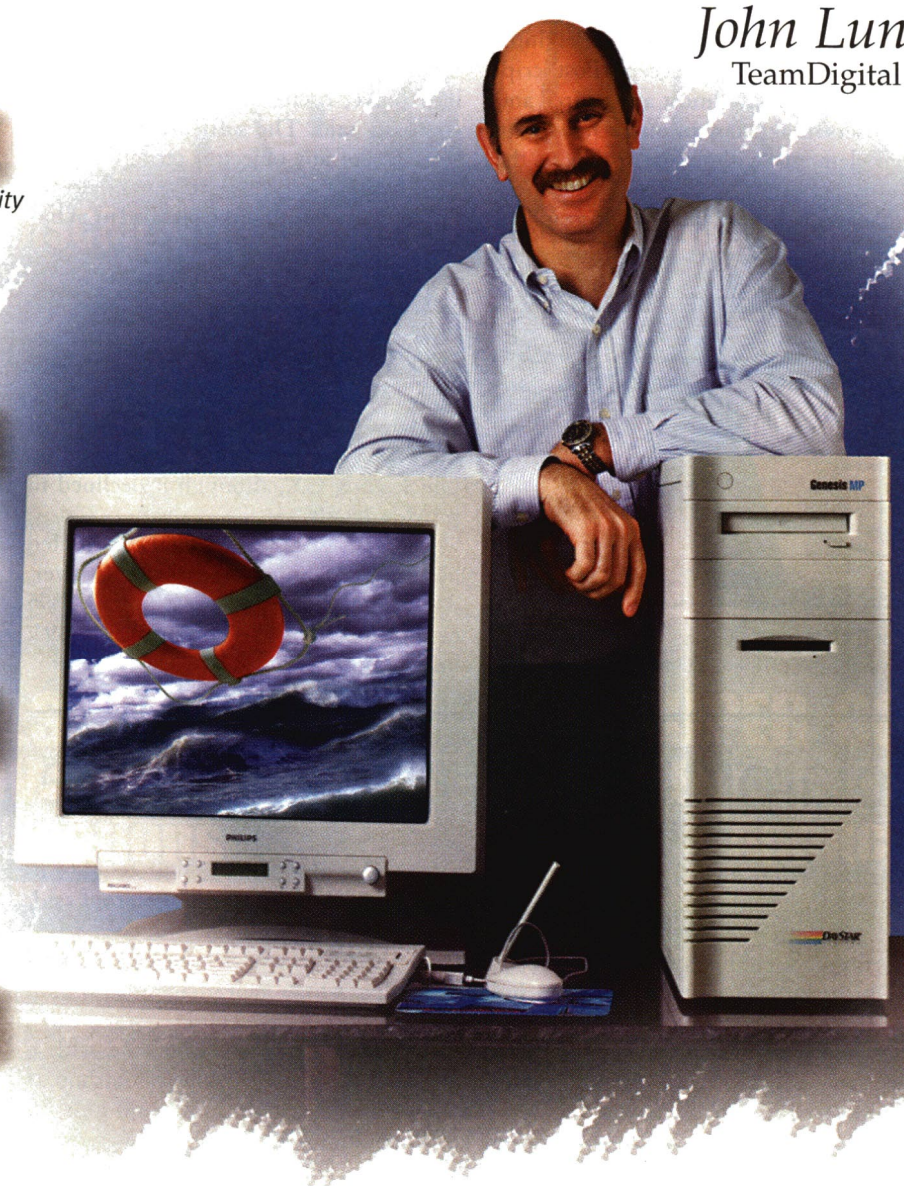
StrataType 3d has gone native for one-third the price.

Strata Inc. of St. George, Utah, can be reached at (801) 628-5218 or (800) 678-7282; fax (801) 628-9756; http://www.strata3D.com.

Genesis MP...

"My Link to Profits in Publishing"

John Lund
TeamDigital



Make Money!

Genesis MP boosts productivity at Leo Burnett, Forbes, R.R. Donnelly, Disney, and others...

Superfast Apps!

New titles for imaging, video editing and 3D effects build the Genesis MP advantage...

Stay Up-To-Date!

Genesis MP puts you on the leading edge...ahead of your competition!

Editors Love It!

Great reviews and reports keep piling up on the Genesis MP!

Extreme Speed!

Head-to-head tests show the Genesis MP faster than expensive systems from Sun and SGI!

Pro's Love It!

Pro's like John Lund need Genesis MP– the ultimate system for Mac OS professionals...

Dazzling Awards!

In competition after competition, Genesis MP rules!

Easy To Buy!

Get on our web page and build your own ultimate workstation!

"With *four* PowerPC 604 processors, Genesis MP is like giving myself a 400% raise. I keep finding new ways to make more money with it!"

To John Lund, world renown digital photographer/imager and Genesis MP user, the **new creative flow** released by the power of Genesis MP was no surprise. But he was surprised by the new ways TeamDigital is finding to **add to the bottom line**. Genesis MP created so much unexpected revenue that TeamDigital earned their first four monthly lease payments in a matter of hours.

As John puts it, "Adding Genesis MP was like adding another shift at TeamDigital, except without the payroll!" But don't just take John's word for it. Link to our Web page and **get all the information** you need to decide in favor of Genesis MP. Let DayStar's Genesis MP be the life preserver for your bottom line.

http://daystar.com/fast.html

Mac™ OS

DAYSTAR® DIGITAL

©1996 DayStar Digital and TeamDigital, 5556 Atlanta Hwy., Flowery Branch, GA 30542, 770-967-2077, Fax: 770-967-3018

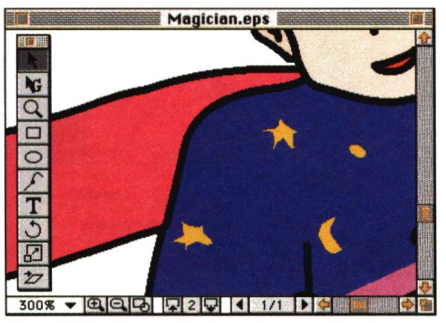
Tailor GX lets users alter PostScript files

By Kristin Balleisen

A new Mac import from European developer FirstClass NV promises to make manipulating PostScript files a little easier with the help of QuickDraw GX.

Tailor GX for the Macintosh is a $495 visual PostScript editor based on FirstClass' product for NeXT workstations. The software lets users edit any PostScript graphic in either a preview or wireframe mode.

According to the Zwijnaarde, Belgium-based company, Tailor accepts PostScript or EPS files from almost any source and lets users make last-minute changes to page elements without returning to the original application. Users can save images as PostScript, EPS or Illustrator 3 graphics, the company said.



Tailor GX lets users examine, reposition and edit any graphical element in a PostScript page.

Tailor features path-editing tools that let users change outlines, edit masks and convert text to a path. The application's graphics inspector lets users easily change colors, fonts and line thickness; users can also select, move, rotate and scale objects, the company said. The software can modify the color of any object; it recognizes and modifies spot colors, FirstClass said. In addition, users can alter the placement of bitmapped images within an EPS file.

A document inspector detects PostScript errors so users can correct them. The current version does not support printing, however.

The product requires System 7.5 or higher as well as QuickDraw GX 1.1.2; the company said it is developing a version of the PostScript editor that is not based on QuickDraw GX, although it declined to provide details.

In North America, Tailor is distributed by EnFocus Software Inc. of Denver, which can be reached at (303) 861-2395 or (888) 363-6287; fax (303) 861-2393; info@enfocus.com. □

INTEGRATE MACINTOSHES – with – Sun/SGI/HP

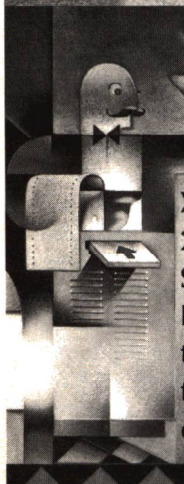
K-AShare – allows Macintosh computers to use a UNIX host as an AppleShare file server.

K-FS – enables UNIX users to access AppleShare volumes on a Macintosh.

K-Spool – allows Macintosh and UNIX users to share PostScript printers anywhere on the network.

FullPress – offers integrated prepress file-sharing and print-spooling, *including OPI!*

Point and click UNIX GUI...
No additional Macintosh software required!



Xinet
2560 Ninth Street
Suite #312
Berkeley, CA 94710
tel: 510.845.0555
fax: 510.644.2680
email: xinet@xinet.com

Server to the Macs...

Polaroid sprints into midrange

By Kristin Balleisen

Polaroid Electronic Imaging Systems last week announced a new midrange addition to its film-scanner lineup.

The SprintScan 45 will ship this spring for $9,995, the company said. It will be able to scan positives, negatives and transparencies measuring from 35mm to 4 by 5 inches.

The SprintScan 45 will use a third-party trilinear CCD (charge-coupled device) array to capture 12 bits each of RGB information per pixel in a single pass. It will feature a maximum optical resolution of 2,000 by 4,000 dpi; via interpolation, the scanner will be able to capture 4,000 by 4,000 dpi, Polaroid said. It will also feature a density range of 3.4.

The SprintScan 45 will be able to scan a 2,000-dpi, 4-by-5 inch image in less than five minutes, Polaroid said.

The SCSI-2 device will come with a scanning plug-in for Adobe Photoshop. It will also ship with four- and one-up 35mm, 6-by-6 and 6-by-7-centimeter, and 4-by-5-inch holders.

Polaroid Corp. of Cambridge, Mass., can be reached at (617) 386-2000 or (800) 816-2611; fax (617) 386-9339; http://www.polaroid.com. □

Projector brightens Sharp lineup

Sharp Electronics Corp. in February unveiled a bright new addition to its LCD projector line.

The XG-E630U, slated to ship this month for less than $5,000, is based on a new 6.4-inch, 24-bit-color TFT (thin-film transistor) active-matrix LCD panel with a resolution of 640 by 480 pixels.

The device includes a 330-watt metal-halide lamp. According to Sharp, the projector's design lets it output 300 lumens to project images up to 150 inches, measured diagonally.

The XG-E630U supports NTSC, PAL (European) and SECAM (French) video standards. It handles composite and S-video, VGA, compressed Super VGA, and Mac signals.

The projector includes a 5-watt amplifier and stereo speakers and will ship with a wireless remote. It measures 13.8 by 8.3 by 18.1 inches and weighs 20.5 pounds.

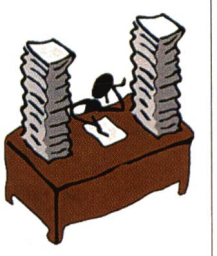
Sharp Electronics Corp. of Mahwah, N.J., can be reached at (201) 529-8731; fax (201) 529-9636; prolcd@sharpsec.com. □

Focus on color: Sharp's XG-E630U projector uses a custom LCD panel that boosts the device's projection capabilities to 300 lumens.

CLIP ART BEAT

Strength in numbers. Aliso Viejo, Calif.-based Nova Development Corp. has launched Art Explosion 40,000, a five CD-ROM set that includes 40,000 royalty-free images for $89.95. Browser applications are included. Phone (818) 591-9600 or (800) 395-6682; fax (818) 591-8885.

A hill of beans. Screen Beans from A Bit Better Corp. of Los Altos, Calif., comprises three collections of business clip art with generalized human figures. Each of the more than 300 images is about 2 Kbytes in size. Each collection is $24.95, and all three are $59.95. Phone (415) 948-4766; fax (415) 917-0151; beans@bitbetter.com.



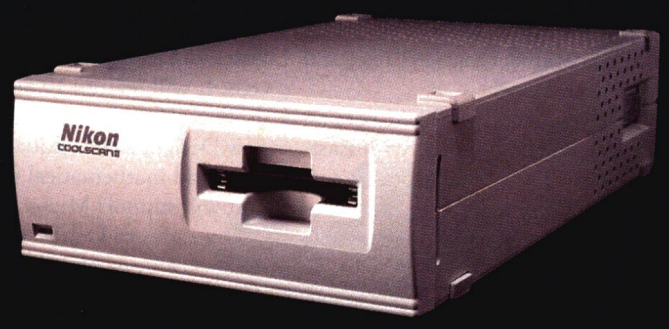
Ring in the old. Olde Worlde Ornaments I is the latest offering from Aridi Computer Graphics Inc. The ninth clip-art CD-ROM from the Dallas-based company costs $149 and contains 300 designs grouped into six categories. Phone (214) 404-9171; fax (214) 404-9172.

Clip-art clippings. Calgary, Alberta-based **Image Club Graphics Inc.** has released a host of new collections. Sketches On the Town, Businessville, Sketches Around the World and Schoolsville are $99 each. The two-volume Hoopla! Cuts and Hoopla! Splash disc costs $179. ... **Plastic Thought Inc.** of Edmonton, Alberta, has introduced its 3d-Active 3-D clip-art CD-ROM for $79.95. The 54 models are in 3DMF (3-D metafile format) and DXF (Drawing Interchange File) formats. ... **The Art Center** of Baxter, Iowa, has a library of 50,000 images on 10 unlockable CD-ROMs for $129.95. Each image is $5.95; 25 free images are included.

— By Kelly Ryer

OUR QUALITY SPEAKS VOLUMES

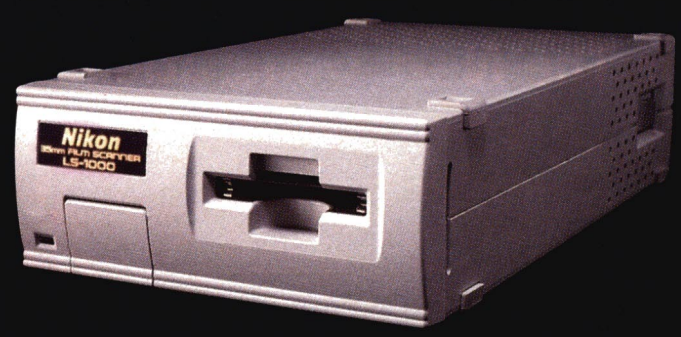
New Nikon Coolscan® II. High-speed 35mm scans at an affordable price.



COOLSCAN® II
For LOW-Volume Applications

Coolscan II features precision autofocus and high-speed 8-bit digital signal processing for fast single-pass scanning. This affordable personal scanner will produce high-quality, professional results for the home-office. It provides 2,700 dpi color scans from full-frame 35mm slides and negatives in just 80 seconds.*

Coolscan II, like Super Coolscan, features LED illumination and Nikon Scan software for comprehensive control and ease of use. But most importantly, you get the exceptional color fidelity, superb shadow detail



SUPER COOLSCAN®
For HIGH-Volume Applications

and razor sharp definition that has become synonymous with all Nikon scanners.

For high-volume professional scanning, Nikon Super Coolscan provides 12-bit processing, 40-second* scan times and the optional SF-100 Auto Slide Feeder for unattended scanning of up to 50 slides in sequence.

Scanned on Coolscan II.

To find out more about the Coolscan family of quality 35mm slide scanners, new Coolscan II, Super Coolscan and Coolscan, call 1-800-52 NIKON or (516) 547-4355.

score card MacWEEK

MacUSER EDITORS' CHOICE AWARD 1995 FINALIST

Electronic Imaging COOL award 1995

MAC TODAY EDITORS' CHOICE 1995 MAGAZINE

Nikon®
ELECTRONIC IMAGING

*Speeds can be faster or slower depending on system configuration.

©1996 Nikon Inc.

Adobe withdraws updater

By James Staten

Adobe Systems Inc. apparently jumped the gun this month when it shipped an update to PageMill, the company's HTML editor.

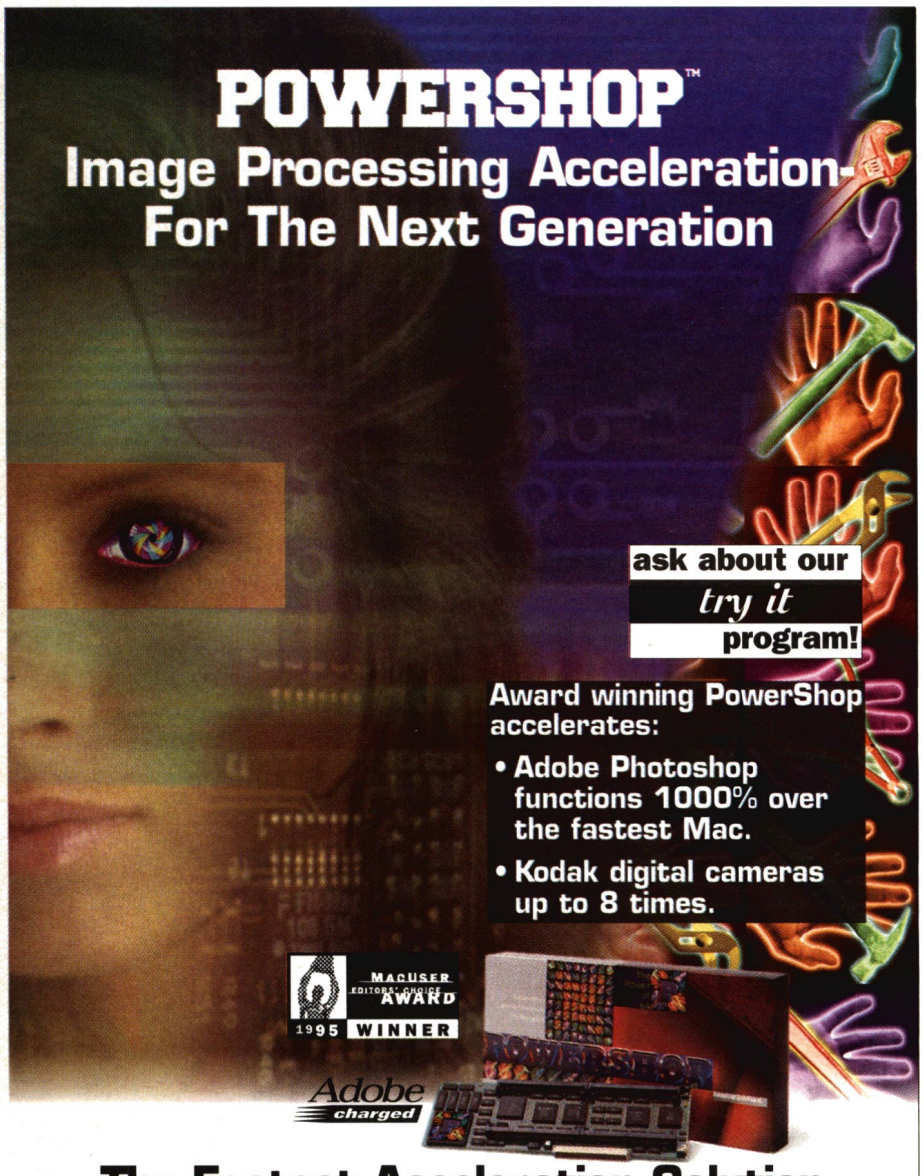
Adobe announced last week that it has pulled the PageMill 1.0.1 updater from its servers because it failed to correct a bug that corrupts files. Kevin Wandryk, Adobe director of business development for Internet products, said the bug affects only users of 680x0-based Macs.

A corrected updater, Version 1.0.2, should be available on-line this week.

Wandryk said the file-corruption bug may also be present in SiteMill. To stave off any problems, Adobe said, a patch for the company's Web-site-administration tool is also in the works.

"Even though the number of customers who called about the bug is relatively small, we decided to be proactive in pulling the updater and getting the second one up there as quickly as we can," Wandryk said.

Adobe Systems Inc. of Mountain View, Calif., can be reached at (415) 961-4400; fax (415) 961-3769; http://www.adobe.com. □



The Fastest Acceleration Solution Available For Adobe Photoshop

If you're a service bureau, digital photographer, or graphic artist involved in serious imaging in Adobe Photoshop, your time is MONEY. Don't spend it watching the progress bar!

PowerShop utilizes the power of not two, not four, but 64 processors working in parallel to provide blazing Photoshop performance. Just ask Ed Lupo, president of Graphic Arts Associates, Inc. of Memphis. "After installing PowerShop, the progress bar literally disappeared on most compute intensive functions. I've seen a 75% increase in our imaging production, which gives us more time to be creative and get the job done ahead of schedule. My customers like that... I love it!"

See what PowerShop can do for your next imaging project – visit our web site at **http://www.asi.com,** or call **1-800-482-6277** for more information.

POWERSHOP
THE POWER OF 64

Adaptive Solutions®

1400 N.W. Compton Drive • Suite 340 • Beaverton, Oregon U.S.A. 97006

PowerShop is a trademark of Adaptive Solutions, Inc. Adaptive Solutions is a registered trademark of Adaptive Solutions, Inc. All other trademarks are the property of their respective owners.

Point-S

From Page 12

In addition, the upgrade will let users export color swatches to Adobe PageMaker and Illustrator, QuarkXPress, and Macromedia FreeHand.

According to sources, an OEM version of the software will be bundled with Eastman Kodak Co.'s DCP 9000 proofing system (see 10.16.95, Page 12).

Users of the current version will be able to upgrade for $49.95.

Founded in 1995, Point-S is a successor to Emulation Technologies Inc. of Cleveland, which developed the PressWise page-imposition software for Aldus Corp. of Seattle before that company was acquired by Adobe Systems Inc. of Mountain View, Calif.

Point-S Inc. of Cleveland can be reached at (206) 353-9266 or (800) 905-3339; fax (206) 513-0731; http://www.point-s.com; info@point-s.com. □

3-D cards

From Page 12

designed to support texture mapping."

Newer's RenderPix board, due in May for about $1,200, will use the Glint300SX and the Glint Delta, a "setup processor" that assists the main chip by calculating the slope of triangles and converting floating-point operations to six-point math. According to Newer, the board will be able to render 300,000 triangles per second.

The RenderPix board will come with 2 Mbytes each of video RAM frame buffer and dynamic RAM local buffer. Optional daughtercards will increase both buffers to 8 Mbytes.

Atlanta-based Mentor Software Inc. is building the RenderPix board for Newer. David Amis, Mentor president, said: "The problems with QuickDraw 3D texture mapping will be true with any 300SX board. Even the Delta won't help."

Texture-hungry QuickDraw 3D users may find relief in the Glint 500TX, the next-generation chip from 3Dlabs. The chip, expected this spring, is specially designed to accelerate texture mapping. Newer is reportedly developing a new QuickDraw 3D accelerator based on the 500TX. Sources said that board makers will be able to easily substitute the new chip for the 300SX.

Newer Technology of Wichita, Kan., can be reached at (316) 685-4904 or (800) 678-3726; fax (316) 685-9368; http://www.newertech.com. □

DeltaGraph 4.0 adds functions

DeltaPoint Inc. this month will deliver a new version of its charting and presentation program.

DeltaGraph 4.0 will feature a variety of new text- and graphics-handling tools, enhanced analysis options, and greater integration with other software packages.

Version 4.0 of the $195 software package will let users rotate text 360 degrees, place grids over any 2-D data graph, zoom in to 400 percent and drag axes to any position.

The new version will also support broken-axis charts, draw symbol charts faster and let users import data directly into cells. It will feature 10 new chart types and process more than 30,000 rows of data. A new DesignScience Equation Editor will let users add mathematical formulas to charts.

It will support Microsoft Excel 5.0.

Upgrades to DeltaGraph 4.0 are $49.95 to users of Version 3.5 and $79.95 to others.

DeltaPoint Inc. of Monterey, Calif., can be reached at (408) 648-4000; fax (408) 648-4020; http://www.deltapoint.com. □

Inkjets

From Page 12

Script Level 2 and 39 Type 1 fonts. It will use a 16-MHz Intel 960iCF RISC chip and ship with 68 Mbytes of RAM for image processing as well as a 3-Mbyte buffer. The printer will come with HP's multiprotocol JetDirect network interface card.

▸ **NewGen** unveiled a 36-inch-wide digital proofing system, still unnamed, that the company said will ship in the second quarter for less than $40,000.

The proofer will feature a CMYK inkjet printer with a resolution of 300 dpi and include a stand-alone PostScript Level 2 RIP based on a Pentium PC. The RIP will integrate the company's ChroMatch color-matching technology as well as its stochastic-screening algorithms.

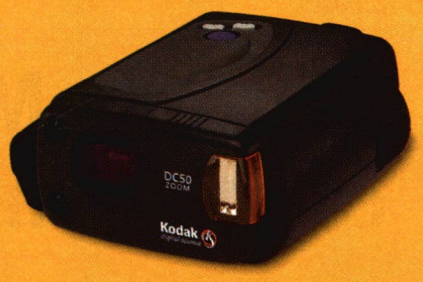
Eastman Kodak Co. of Rochester, N.Y., can be reached at (716) 726-7260 or (800) 235-6325; http://www.kodak.com.

Epson America Inc. of Torrance, Calif., can be reached at (310) 782-0770 or (800) 289-3776; fax (310) 782-5220.

NewGen Systems Corp. of Costa Mesa, Calif., can be reached at (714) 641-8600; fax (714) 641-2800. □

Epson's Stylus 1500 can print CMYK images measuring up to 13.6 by 21.78 inches.

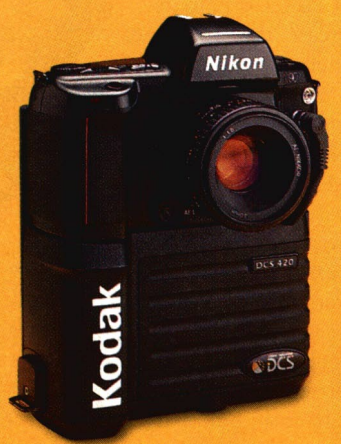
We offer unsurpassed digital image quality. (And by the looks of it, quantity too.)



The DC50 zoom camera is our newest point-and-shoot. It comes with three levels of image resolution, and a 3:1 zoom lens. PCMCIA-ATA compatible card optional.

The DCS 465 digital camera back is compatible with medium format cameras (HASSELBLAD, MAMIYA) and 4 x 5 view cameras. It offers 6 million pixel resolution, and works with professional flash systems.

The DCS 460 digital camera offers 6 million pixel resolution, and a high sensitivity for shadow and detail. Our premier digital camera.



The DCS 420 digital camera sports 1.5 million pixel resolution, and an initial continuous burst rate of 5 images in 2.25 seconds. The perfect NIKON camera partner.

The EOS-DCS 5 digital camera works seamlessly with CANON auto focus lenses, offers 1.5 million pixel resolution, and a continuous burst rate of 10 images in just over 4 seconds.

The DC40 camera offers a choice of snapshot and high-resolution pictures, 380,000 pixel images, 24-bit color, and a focus-free lens. Our most affordable digital camera.

Kodak didn't start out with this many digital cameras. We started out with one. The first megapixel digital camera ever built, in 1986.

Since then, we've made cameras for NASA, for professional photographers, for medical professionals, desktop publishers, and business people. And as we've created cameras to meet different needs, our digital camera family has grown.

While *Kodak Digital Science*™ cameras vary from high-end to point-and-shoot, what they share are the very things that make them *Kodak* cameras. A commitment to preserve image quality through every stage of the digital process. And the technology to make it so.

Technology including a sensor designed for computer images, not video output, that captures fine detail. A color filter array pattern that holds images true to form while minimizing pixellation.

A patent-pending compression algorithm, that prevents data loss during storage. And of course, Kodak's color expertise, responsible for our rich, true, saturated palette. Together, this technology captures and protects images like no other single-shot digital camera, resulting in unsurpassed picture quality that you can only get from Kodak.

It appears, the DC40 takes honors as easily as it takes pictures.

To find out more about our full line of *Kodak Digital Science* cameras, call us at 1-800-322-2177 ext. 602 in the United States, 1-800-465-6325 ext. 36100 in Canada. Or visit us on the World Wide Web at http://www.kodak.com/

Kodak *digital science*™

TAKE PICTURES. FURTHER.

© Eastman Kodak Company, 1996. Kodak, Digital Science and the ds monogram symbol are trademarks of Eastman Kodak Company.

INTERNET WHO?

On-line service subscriptions reached nearly 15 million in 1995, up 87 percent from '94.

— Simba Information Inc.

Spring bloom of ISDN cards

Motorola, Chase, RNS to chip in

By Joanna Pearlstein

This spring a field of ISDN offerings will blossom for Mac users.

Chase Research Inc. and RNS, formerly a division of Rockwell International Corp., will make their debuts in the Mac market, while Motorola Inc.'s Information Systems Group will add to its lineup.

Chase Research Inc. in April will ship the $425 NetChaser, an external ISDN, or Integrated Services Digital Network, terminal adapter. This dual-channel external device provides throughput up to 128 Kbps. A built-in NT1 lets users connect their terminal adapters directly to the wall outlet. Two analog POTS (plain old telephone service) jacks are also provided for connecting telephones, modems or fax machines to the device.

RNS in April will introduce two as-yet-unnamed ISDN cards aimed at the pre-press market. Both products will be offered in PCI and NuBus flavors and are

See ISDN, Page 22

Chase Research's NetChaser is an ISDN terminal adapter that supports connection speeds up to 128 Kbps.

Apple deals token-ring PCI card

Apple this month gave PCI Mac users a way to join token-ring networks with its PCI card for token-passing LANs.

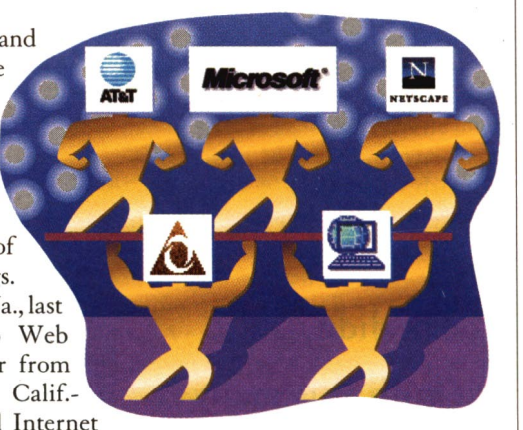
The $495 PCI card is based on IBM Corp.'s token-ring chip set and includes an autosensing feature that detects whether the device is connected to a 4- or 16-Mbps network. The card has a built-in connector for Type 3 cabling and an adapter for hooking up to a Type 1 network.

Apple bundled System 7.5.3 and Open Transport with the card; both are required. The card also comes with PCI network-installer software.

It is compatible with Power Mac 7500, 8500 and 9500 models but not the Power Mac 7200, according to Apple. □

Netscape, Microsoft court on-line services

By James Staten



America Online Inc. and CompuServe Inc. are joining with Netscape Communications Corp., Microsoft Corp. and AT&T Corp. to increase the appeal of their on-line offerings.

AOL of Vienna, Va., last week licensed two Web browsers, Navigator from Mountain View, Calif.-based Netscape and Internet Explorer from Redmond, Wash.-based Microsoft. Through a new version of the AOL client, members will be able to choose either tool as their default Internet browser instead of the browser currently bundled with the service. Version 3.0 of the Mac AOL client, due this summer, will be the first to offer the choice.

Columbus, Ohio-based CompuServe said members of its CompuServe Information Service and SpryNet will be able to choose either application as their default integrated browser, as well.

Currently, CompuServe users

See On-line, Page 20

ARA 2.1 to support ISDN

By Joanna Pearlstein

Apple will expand support for ISDN connections in Apple Remote Access 2.1, due this summer.

The 2.1 release (see 02.26.96, Page 16) will support ISDN, or Integrated Services Digital Network, connections up to 128 Kbps. Bug fixes and additional modem scripts will also be included in the release.

According to Ravi Rishy-Maharaj, Apple product manager for connectivity and telephony, the current version of ARA can support ISDN speeds only up to 19.2 Kbps — about one-sixth of the 128-Kbps maximum speed most dual-channel ISDN terminal adapters can achieve.

"The speed before depended to a great extent on the serial driver that ARA was working with," said Rishy-Maharaj. "It was partially because we didn't have modem scripts to support 28.8-Kbps connections. We just didn't have the scripts done."

Support for 128-Kbps ISDN connections is also offered in Version 2.1 of the ARA MultiPort Server, which was released in February. Apple said ISDN support would be added to the ARA Personal Server this summer.

"What we've seen is an upsurge in the marketplace [for] ISDN," Rishy-Maharaj said. "Services are available at a low cost point, and our customers would like to leverage that infrastructure."

Rishy-Maharaj noted that a bug in Open Transport 1.0x prevented ARA 2.x clients from using some network services. The problem has been addressed in Open Transport 1.1, which was recently released as part of System 7.5.3 (see 03.11.96, Page 14).

Sources said Apple will add Point-to-Point Protocol support to ARA 3.0, reportedly due late this year or early next year. Apple declined to comment on ARA 3.0. □

FOCUS ON INTERNET

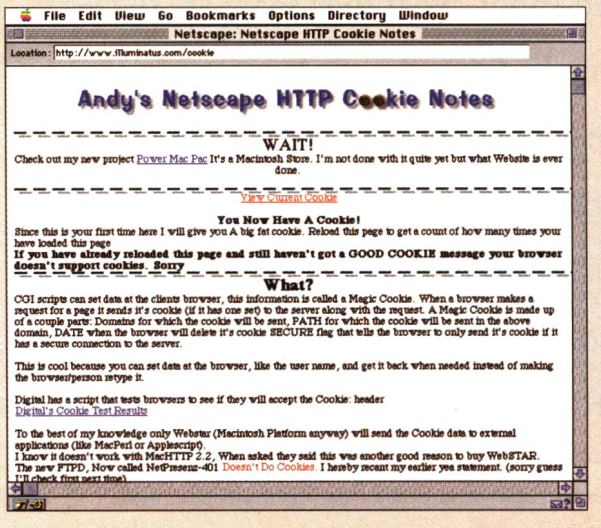
Navigator tricks raise concerns

By James Staten

Is Big Brother watching your activity on the Internet? Two recently revealed capabilities of Netscape Navigator 2.0 are raising concerns over Web browsing privacy.

The latest version of Netscape Communications Corp.'s Web browser adds JavaScript and a feature called HTTP Cookie to the Mac. These two capabilities are at the heart of the controversy.

JavaScripts can be sent to a browser whenever a particular page is requested. These scripts can perform a range of tasks from scrolling text to launching an applet. However, in between these mostly harmless functions are capabilities that some say border on invasion of privacy.


File Edit View Go Bookmarks Options Directory Window
Netscape: Netscape HTTP Cookie Notes
Location: http://www.illuminatus.com/cookie
Andy's Netscape HTTP Cookie Notes
WAIT!
Check out my new project Power Mac Pac It's a Macintosh Store. I'm not done with it quite yet but what Website is ever done.
View Current Cookie
You Now Have A Cookie!
Since this is your first time here I will give you A big fat cookie. Reload this page to get a count of how many times your have loaded this page
If you have already reloaded this page and still haven't got a GOOD COOKIE message your browser doesn't support cookies. Sorry
What?
CGI scripts can set data at the clients browser, this information is called a Magic Cookie. When a browser makes a request for a page it sends it's cookie (if it has one set) to the server along with the request. A Magic Cookie is made up of a couple parts: Domains for which the cookie will be sent, PATH for which the cookie will be sent in the above domain, DATE when the browser will delete it's cookie SECURE flag that tells the browser to only send it's cookie if it has a secure connection to the server.
This is cool because you can set data at the browser, like the user name, and get it back when needed instead of making the browser/person retype it.
Digital has a script that tests browsers to see if they will accept the Cookie: header
Digital's Cookie Test Results
To the best of my knowledge only Webstar (Macintosh Platform anyway) will send the Cookie data to external applications (like MacPerl or Applescript)
I know it doesn't work with MacHTTP 2.2, When asked they said this was another good reason to buy WebSTAR.
The new FTPD, Now called NetPresenz-401 Doesn't Do Cookies I hereby recant my earlier yea statement. (sorry guess I'll check first next time)

Cookie monster: Webmasters like Andy Kington of Power Mac Pac can use Netscape's HTTP Cookie function to store information in the client's Web browser such as user name and password or a shopping list.

For example, several Webmasters have reported using JavaScript to retrieve a user's e-mail address, real name and information from the Netscape cache file, which documents a user's movements on the Web.

For example, John Robert LoVerso, who is a researcher at the Open Software Foundation's Research Institute in Cambridge, Mass., used Java-

See Focus On, Page 22

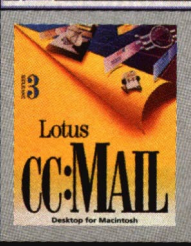
Lotus

The power of people working together.

Introducing cc:Mail for Macintosh Release 3.0.

Lotus cc:Mail™ for Macintosh® Release 3.0 lets you send and receive virtually anything you can create to virtually anyone, on any mail system, anywhere in the world. It doesn't matter whether other users you talk to work on Macintosh or computers running DOS,® Windows,® or OS/2.® cc:Mail's 100+ file viewers let you read and print file attachments, developed on other operating systems and platforms. Call 1-800-872-3387, ext. B512* for our cc:Mail for Macintosh demo CD. Or explore Lotus on the World Wide Web at www.lotus.com for more information.

cc:Mail for Macintosh



cc:Mail is the most comprehensive e-mail system for the Macintosh. The new Release 3 features include: built-in AppleScript support which lets you drag-and-drop commonly used addresses, folders, and other objects to the desktop for easy accessibility; cc:Mail Rules which makes managing your e-mail easy by automating everyday tasks; and cc:Mail Viewers which let you view and print attachments even if you don't have the application with which they were created. When it comes to e-mail for the Macintosh, nothing is more complete or easier to use than cc:Mail.

*In Canada, call 1-800-GO-LOTUS. ©1996 Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142. Lotus is a registered trademark and cc:Mail is a trademark of Lotus Development Corporation. All company names are registered trademarks of their respective companies.

Shiva diversifies remote-access offerings

By Joanna Pearlstein

Shiva Corp. this month expanded its remote-access offerings with a new server, ISDN modules and an update to its operating system.

The company last week shipped WebRover, a remote-access system designed for both intranet and Internet use. Starting at $5,999, the system includes a LanRover remote-access server, an Internet router and a security fire wall from Raptor Systems Inc.

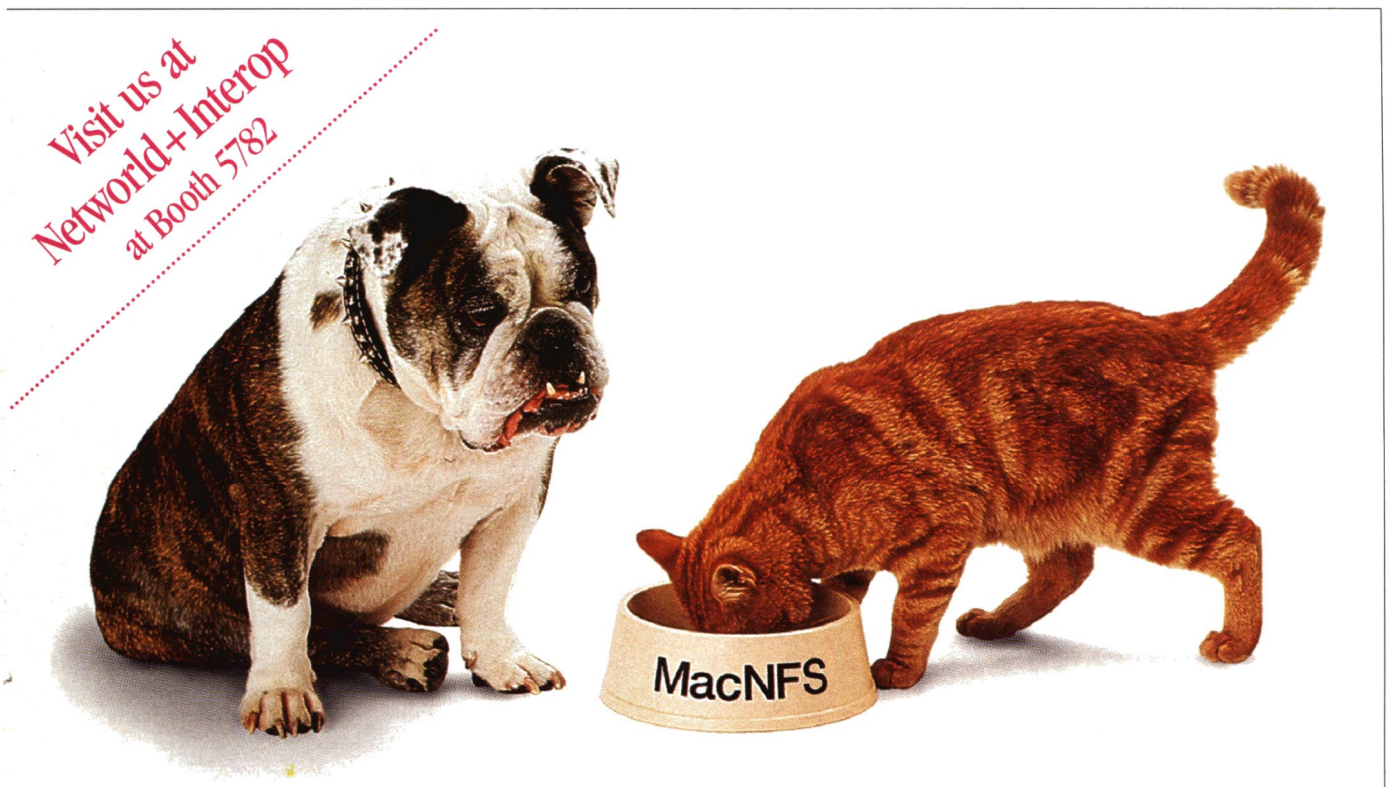
The LanRover provides dial-in and dial-out, analog, and ISDN (Integrated Services Digital Network) remote access functions. It supports Internet Protocol, IPX and Apple Remote Access. WebRover's Internet functionality comes from the included ShivaIntegrator 200, a leased-line router that provides up to T1, or 1.5-Mbps speeds.

The included fire wall options from Raptor Systems of Waltham, Mass., offer application-level filtering to prevent unauthorized network access.

Also last week Shiva shipped $729 Basic Rate Interface ISDN modules for the LanRover/PLUS. These modules add ISDN compatibility to the LanRover/PLUS and support a variety of ISDN devices on the client side. By combining two B channels the modules can transmit data at speeds up to 128 Kbps.

Finally, Shiva has released Version 4.0 of the operating system for it servers, ShivOS 4.0, which adds ISDN support; MultiLink Point-to-Point Protocol integration; enhanced data compression; and Tariff Management, a technology designed to minimize ISDN costs.

Shiva Corp. of Bedford, Mass., can be reached at (617) 270-8300 or (800) 977-4482; fax (508) 788-1539; sales@shiva.com; http://www.shiva.com. □



MacNFS™ teaches your Macintosh and UNIX to share.

Not long ago, Macintosh and UNIX machines were about as compatible as, well you know. Now, you can achieve true NFS connectivity with MacNFS from TSS. MacNFS lets users share information with multiple-vendored UNIX machines as if they were on a local Macintosh volume.

- **The only Open Transport Ready NFS client available**
- **Shares data with UNIX, DOS, and Windows applications**
- **The fastest and most reliable NFS client for the Macintosh**
- **MacNFS is as easy to use as AppleShare**

For an immediate NFS solution for your Macintosh, contact us today!

TSS

Thursby Software Systems, Inc.

5840 West Interstate 20 • Arlington, TX 76017 U.S.A. • Telephone: (817) 478-5070
Facsimile: (817) 561-2313 • Internet: sales@thursby.com • www: http://www.thursby.com

Mac OS

©1996 Thursby Software Systems, Inc. Mac and the Mac OS logo are trademarks of Apple Computer, Inc., used under license.

On-line

From Page 18

are free to choose any browser, since the MacCIM 2.x client does not provide an integrated Web solution. However, Version 3.0, due this quarter, will allow users to install a browser that can be accessed directly from within MacCIM.

In return for these new deals, Netscape and Microsoft will form marketing partnerships with the two services.

AOL's agreements give the on-line service company a prominent position on the Netscape Web site and an in-the-box position with Windows 95. CompuServe will be listed as one of the default Internet service providers in Netscape's retail product, Navigator Personal Edition. CompuServe will also be the only provider bundled with the international version of Navigator.

Other financial, co-marketing and technology-sharing efforts were also part of the deals. AOL said that as part of its agreement with Microsoft, it will adopt ActiveX technologies, designed to bring animation, video and 3-D to the Internet. In turn, Microsoft will license the ART compression technologies from AOL subsidiary Johnson-Grace Co.

Meanwhile, AOL signed a second agreement last week that will allow members of AT&T's WorldNet Internet access service to sign on to AOL for a reduced rate. AOL did not disclose what the lower monthly fee will be; the WorldNet service should be available early this summer.

CompuServe said it is also in talks with Basking Ridge, N.J.-based AT&T to bring WorldNet users onto its information service.

"None of these are exclusive deals," said Gene DeRose, president of Jupiter Communications Inc. of New York. "It has more to do with enabling options for users than anything else."

In related news, AOL announced that a new version of its Mac client will ship this spring. Version 2.7 will have an update to the current AOL Web browser developed by InterCon Systems Corp. of Herndon, Va. The browser will support HTML tables and include a new, easier-to-use bookmarks interface. □

You will be amazed...

Specular

It's incredible what we can fit into a box.

Specular products just might be the best-loved graphics software on the Macintosh. And why not? From 3D animation to texture design to image composition, we've gained the respect of graphics professionals and enthusiasts the world over. And the press agrees, proven by the number of prestigious awards given to us. It's accolades like these that make Specular a trusted and best-selling name.

A diverse group of users in film, television, multimedia and print rely on Specular software everyday. And while the quality, price and performance of our products speak for themselves, we understand the software market is a loud and confusing place. So we offer the Specular Guarantee, a 30-day money-back guarantee that lets customers buy with confidence. So check us out. You might fall in love....

NewMedia Magazine Awesome

1994 World Class Winner Macworld

1994 MacUser Editors' Choice Award Winner

1992 MacUser Editors' Choice Award Winner

1995 MacUser Editors' Choice Award Winner

1•800•433•7732

http://www.SPECULAR.com

Specular Products are proudly distributed by Ingram Micro.

FOCUS ON
From Page 18

Script to create an agent that checks every second to see what page a user is on, and the agent automatically forwards this information back to his server. He said JavaScript code is not supposed to stay on the client after a user leaves a site. However, this security hole was not filled in the final version of Navigator 2.0.

The second feature of Navigator that has Web surfers upset is HTTP Cookie, or client-side persistent information.

This feature can store information for reuse on particular sites such as user name, passwords, shopping lists, demographics and method-of-payment data on the client. When users return to one of these sites, their log-in information is provided automatically, their shopping list is maintained, and they can purchase items without having to re-enter their credit card number. Sites can read only HTTP Cookie information they create, so users must re-enter information for each site they visit.

That's how Netscape pitches the feature. But researchers and developers said HTTP Cookie can be used to do much more. John Yang, a research assistant in the geology department at Florida International University in Miami, said the Cookie features can be used to track the client's every move while connected to a particular server. This information can then be fed into a database to keep statistics on site usage so Webmasters can tailor a site to a particular user's interests.

Combine Cookie with JavaScript and a site's administrator could launch a very effective direct-mail campaign without ever having asked the user for permission, Yang said.

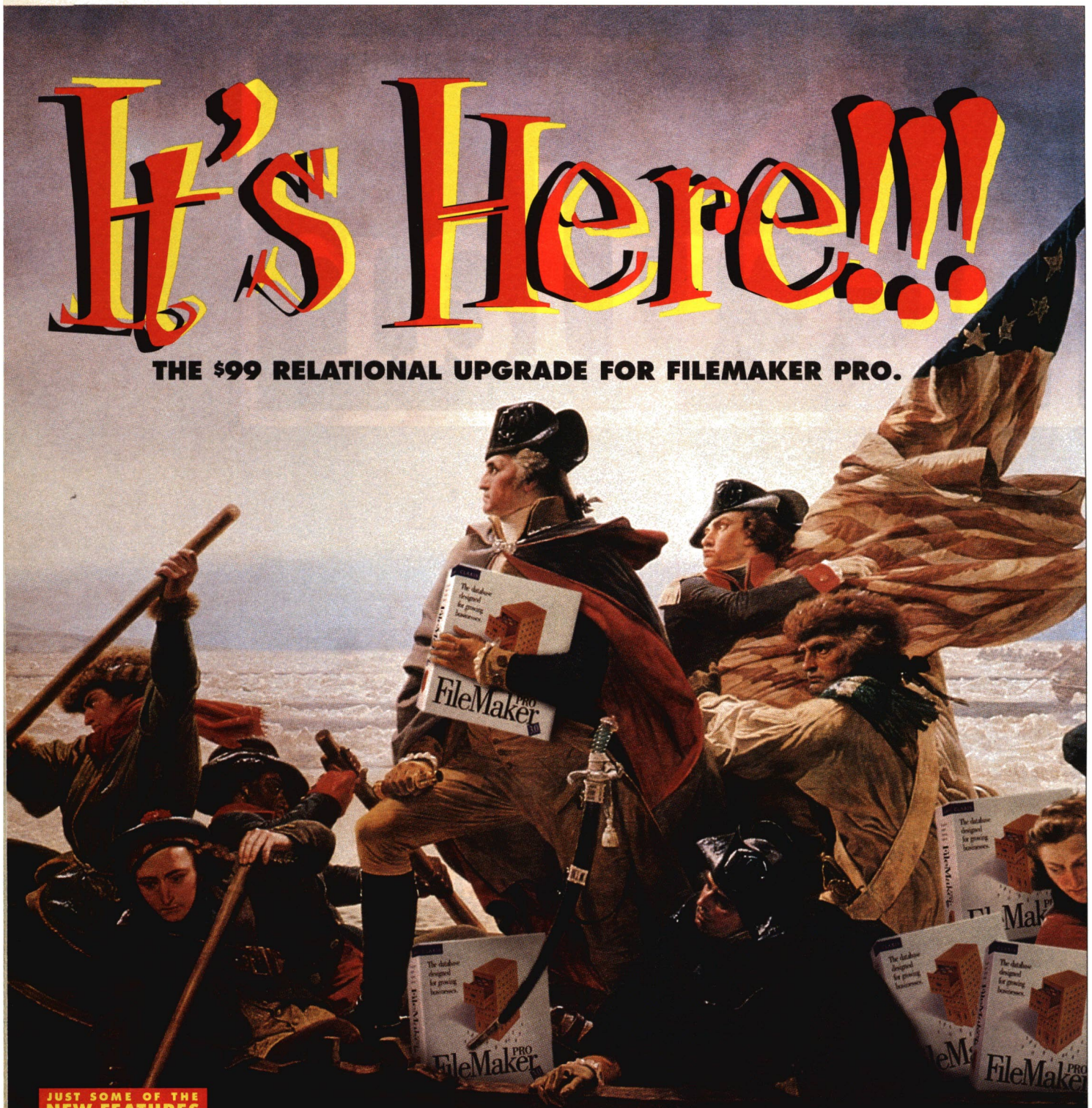
In more malevolent hands, these new tools can do far worse. For example, a Webmaster could pretend to be a particular site to retrieve a user's Cookie data without authorization. "If you use a server that does not encrypt its information, there is a real problem," Yang said.

HTTP Cookie is not exclusive to Netscape Navigator. Microsoft Corp.'s Internet Explorer, Netcom On-line Communications Services Inc.'s Netcruiser and Quarterdeck Corp.'s Quarterdeck Mosaic 2.0 Mac browsers also support it.

Frank Chen, security product manager at Netscape, said he is aware of the potential problems with both HTTP Cookie and JavaScript and is taking steps to remedy the situation. For one, he said a new version of Navigator should be out this week that fixes many of the security bugs in JavaScript. Netscape is also determining how to restrict HTTP Cookie to make it more secure.

"We've provided the Cookie specification to the IETF [Internet Engineering Task Force] for thorough scrutiny to make it more secure," Chen said. He added that Netscape is looking at adding a feature that will either disable Cookie and JavaScript support or alert the user to their presence.

"You've got to be able to store some information on the client side in order to build robust client-server applications, but we also have to inform users of the types of information they will receive," Chen said. □


It's Here!!!
THE $99 RELATIONAL UPGRADE FOR FILEMAKER PRO.
FileMaker PRO 3.0
JUST SOME OF THE NEW FEATURES
•RELATIONAL POWER
•ENHANCED SCRIPTMAKER®
•AUTO PHONE DIAL
•INTEGRATED MAIL MERGE
•LARGER FILE SIZE
•OPEN MORE FILES
•NEW TEMPLATE SOLUTIONS
•NATIVE POWER MAC™
•PARAGRAPH FORMATTING
Great news in the battle to be more productive: the revolutionary upgrade for the leading Macintosh® database is now shipping, complete with an arsenal of innovative features. "FileMaker® Pro 3.0 is the ultimate in relational databases and it makes great improvements over its worthy predecessors," says Mac Home Journal (1/96). It "...puts all other Mac databases to shame," raves Small Business Computing Magazine (1/96). FileMaker Pro 3.0 only costs $99 to upgrade or $199 for the full product. So march on over to your nearest dealer, or just call 1-800-293-0617 ext. 995 to order direct.*
CLARIS®
Simply Powerful Software™
*In Canada, please call 1-800-361-6075, ext. 141.
© 1996 Claris Corporation. All rights reserved. Claris, FileMaker and ScriptMaker are registered trademarks and Simply Powerful Software is a trademark of Claris Corporation in the U.S. and other countries. Macintosh is a registered trademark and Power Mac is a trademark of Apple Computer, Inc. in the U.S. and other countries. All other trademarks are property of their respective owners. Pricing reflects Claris' estimated retail price and does not include shipping and handling. Actual price may vary.

ISDN

From Page 18

based on technology licensed from Hermstedt USA of Carlsbad, Calif. (see 02.12.96, Page 16). While pricing was not final at press time, RNS said it will offer a $995 128-Kbps, dual-channel card and a $1,395 256-Kbps, four-channel card. Neither will include an NT1. A 14.4-Kbps modem daughtercard will also be provided for about $500.

Motorola's Information Systems Group has released a Mac version of its BitSurfr Pro ISDN terminal adapter. Priced at $495, BitSurfr Pro for Macintosh is a dual-channel external device supporting transmission speeds up to 128 Kbps. An NT1 is built in.

Chase Research Inc. of Nashville, Tenn., can be reached at (615) 872-0770 or (800) 242-7387; fax (615) 872-0771; info@chaser.com; http://www.chaser.com.

Motorola Inc.'s Information Systems Group of Huntsville, Ala., can be reached at (205) 430-8000 or (800) 221-4380; http://www.mot.com/isdn.

RNS of Santa Barbara, Calif., can be reached at (805) 562-3173 or (800) 262-8023; fax (805) 968-6478; sales@rns.com; http://www.rns.com. □

If your output could be *close to perfect* or *perfect*, which would you choose?

The new Accel-a-Writer 8300 featuring X•ACT (XANTÉ's Accurate Calibration Technology)

Perfect output at a surprisingly perfect price. For the first time in laser printer history, the new Accel-a-Writer® 8300 with **X•ACT**™ allows you to calibrate the accuracy of your printer to within the width of a single dot. No other printer on the market delivers these exacting standards. And true **Adobe™ PostScript™** offers another standard of perfection with high performance and incredible output accuracy.

The new Canon® JX engine is at the heart of this leading-edge printer. And with **1200 x 1200 dpi**, your Accel-a-Writer 8300 becomes a desktop plain-paper imagesetter with the capability to **print up to 12 x 25 inches**.

Finally, XANTÉ's **Enhanced Screening Technology** allows you to further fine-tune your output quality by providing 40% more levels of gray when enabled for exceptional halftones.

So ask yourself... if your output could be *close to perfect* or *perfect*, which would you choose? We think you know the answer. XANTÉ's new Accel-a-Writer 8300. There's no other printer like it.

AT&T Capital Corporation

Optional on-site service provided by XANTÉ, in partnership with Olivetti North America.

olivetti

XANTÉ

Innovations In Output

1-800-926-8839, ext. 2328

Dealers call ext. 2329 FAX: 334/476-9421

MasterCard/VISA/American Express/Discover Card accepted.

Adobe PostScript

© 1996 XANTÉ Corporation. XANTÉ and Accel-a-Writer are registered trademarks of XANTÉ Corporation. Adobe, PostScript, and the PostScript logo are trademarks of Adobe Systems Incorporated or its subsidiaries and may be registered in certain jurisdictions. Other brands and product names are trademarks or registered trademarks of their respective holders.

When it comes to rating multimedia monitors,

AppleVision® 1710AV

$1159*

MacUser *magazine recently put some of the leading multimedia monitors through their paces. They performed lab tests on image and sound quality. They stared at test documents, line art and scanned images. They played their favorite CD's at various levels. They fiddled with knobs and on-screen controls. And they researched street prices and warranties.*

After all the results were in, the ViewSonic 17GA 17" (16.0" viewable) PerfectSound™ multimedia monitor was singled out as the "Best Buy."

No wonder. An entirely new technology creates the ultimate screen image – maximum resolution of 1,280 x 1,024, refresh rates as high as 160Hz, and razor sharp screen definition.

And listen to this. High fidelity speakers are integrated into the monitor bezel so the full, rich stereo sound envelopes you. To quote a satisfied customer, "It rocks, man!"

MacUser RATED DECEMBER 1995

And the 17GA is so attractively priced, it's like getting the multimedia feature for free. Several competitive models cost as much but are not even multimedia monitors.

Rather than toot our own horn, perhaps we should refer you to MacUser *magazine:*

(800) 888-8583 Product Information • (909) 869-7976 • Call FaxSonic at (909) 869-7318 Request Doc. 150 (24-hour fax-on-demand) • Internet: http://www.viewsonic.com • © 1996 ViewSonic Corporation. Corporate names and trademarks are the property of their respective companies.

mice are nice but checks are better.

ViewSonic® 17GA

$850*

"A real multimedia bargain," they said, "the ViewSonic 17GA offers solid image quality, warm colors, fine-sounding audio and a slew of easy-to-use on-screen controls." So when you're ready to buy, remember this: Many 17" (various viewable) multimedia monitors come with mice, but only the ViewSonic 17GA has been selected as MacUser *magazine's "Best Buy."*

+/OUTSTANDING		•/ACCEPTABLE		−/POOR	
RATING	PRODUCT	PRICE	SUPPORT	IMAGE QUALITY	SOUND QUALITY
♦♦♦♦	**ViewSonic 17GA**	•	•	+	•
	A real multimedia bargain, the ViewSonic 17GA (estimated street price, $850) offers solid image quality, warm colors, fine-sounding audio, and a slew of easy-to-use on-sreen controls—all at a competitive price. The stylish case will also make you the envy of your office mates.				
♦♦♦♦	Apple Apple Vision 1710AV	−	•	+	+
♦♦♦½	IBM 17S/S	−	•	•	+
♦♦♦½	Nokia 447W	•	•	+	−
♦♦♦½	Panasonic Pana Media 17	•	+	•	•
♦♦♦	Philips 17B	•	•	•	−
♦♦½	Philips Brilliance 15A	•	•	•	−

Reprinted from "MACUSER," December 1995, Copyright © 1995 Ziff-Davis Publishing Company.

* Estimated street price per "MACUSER" magazine, December 1995.

Ask for Agent 499

ViewSonic®

MacWEEK

· Editor in Chief Mark Hall
Editor Rick LePage
Managing Editor Brenda Benner
Art Director Eleanor Leishman
Director/Editorial Programs Anita Malnig

NEWS
Executive Editor Andrew Gore
News Editor Carolyn Said
Senior Associate Editor/GA Matthew Rothenberg
Associate Editor/News David Morgenstern
Senior Writers Clifford Colby, Joanna Pearlstein, Kelly Ryer
Staff Writer Kristin Balleisen

REVIEWS AND FEATURES
Executive Editor Stephen Howard
Senior Editor/Features Catherine LaCroix
Senior Editor/Reviews Missy Roback
Associate Editor/Reviews Jeff Green
Editor at Large Dale Coleman
Editor Emeritus Henry Norr
Contributing Editors Don Crabb, Ric Ford, Bruce Fraser, Connie Guglielmo, Steve Hannaford, Jonathan Oski

MACWEEK ONLINE
Associate News Editor/On-line James Staten
Senior Editor, ZD Net/Mac Mark Simmons
Associate Editor, ZD Net/Mac Sasha Pave

COPY DESK
Assistant Managing Editor Mariann Hansen
Copy Chief Marty Cortinas
Senior Copy Editor Patricia Orsini
Copy Editor Rebecca Gulick

ART AND DESIGN
Associate Art Director Margaret Lee
Graphic Designer John Farnsworth II
Graphics Associate Gevin Shaw

PRODUCTION
Production Manager Steve Spingola
Production Coordinator Jose Urrutia
Pre-press Manager Tim Manousos
Assistant
Pre-press Manager Tamara Gargus
Pre-press Technician Michele Kellogg

Group Publisher John Blake

Group Business Director Bret A. Violette
Group Business Manager Mary E. Colbert
Group Marketing Director Laurel Clark Skillman
Marketing Manager Renee Bula
Marketing Coordinator Stephanie Arnold
Director, Controlled Circulation Justin Williams
Assistant
Circulation Manager Lorraine O'Shea
Circulation Assistant Josephine Chang
Assistant to Group Publisher Beth Ina
Advertising Coordinators Elizabeth McGinnis, Jennifer Sawyer
Administrative Assistants Colleen Dasher, Gina Michelucci, Deborah Monaghan, Jennifer Weiss

Editorial office: 301 Howard St., 15th Floor, San Francisco, Calif. 94105. Phone (415) 243-3500; fax (415) 243-3651; macweek@macweek.com

MacWEEK Online: http://www.zdnet.com/~macweek/ CompuServe: go zmc:macweek, eWorld: shortcut: macweek

Advertising office: 950 Tower Lane, Foster City, Calif. 94404. Phone (415) 378-5600; fax (415) 378-6903.

Subscriptions: Customer Service Department, MacWEEK, c/o JCI, P.O. Box 10634, Riverton, N.J. 08076-0634. Phone (609) 786-8230.

Permissions and Reprints: Requests for permission to quote from an article should be directed to Chantal Tucker, Ziff-Davis Publishing Co., 1 Park Ave., New York, N.Y. 10016; fax (212) 503-5420. For price quotes on reprints, contact Ziff-Davis Reprints at (800) 825-4237.

MacWEEK is an independent journal, not affiliated with Apple Computer Inc. Apple and Macintosh are trademarks of Apple Computer Inc. Entire contents copyright 1996 Ziff-Davis Publishing Co. All rights reserved. Material in this publication may not be reproduced in any form without permission. MacWEEK is a registered trademark of Ziff-Davis Publishing Co.

BPA INTERNATIONAL

Cooperation between foes

The recent announcement of a cooperative agreement between Apple and Silicon Graphics Inc. is good news for the high-end digital video production industry. It assures the continued dominance of the Mac as a preproduction video workstation, and it helps strengthen QuickTime as a key cross-platform multimedia technology. It also is a nice bellwether of the current climate of change and openness at Apple.

The deal is noteworthy for its content. Apple and SGI have agreed to make their respective platforms work better together in a production environment. Video houses will see improved asset management and process tracking, and will have to spend less time worrying about file formats and version control when they move content between their Macs and SGI Unix workstations.

The announcement is doubly important because of the players involved. Apple and SGI compete against each other in many of the same markets, yet each vendor realizes that increased cooperation could reap even more profitable benefits down the road.

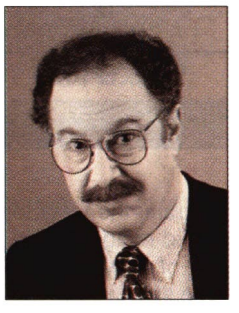
SGI's support of QuickTime is crucial to Apple right now. Microsoft Corp. has once again set its sights on the cross-platform multimedia market with its Active Movie video technology, and Apple has to have the backing of a company with the reputation in the digital video industry of SGI.

The SGI-Apple team is a potent competitor to the threat of Wintel alternatives.

In the past, Apple would never have signed a deal like this because it would have meant giving up something. The company's reaction to competition has been not cooperative agreements but retrenchment. This is partly because of the inbred nature of Apple's proprietary operating system and technology, which has long proven to be a powerful inhibitor against change. With agreements like the one it now has with SGI, Apple is working hard to prove that it can change its course without giving up its mission. □

THE SECOND DECADE HENRY NORR

User friendliness makes a comeback in OS update



Believe it or not, I'm always on the lookout for good news to discuss here, and this week I thought I had something. I had traipsed to Cupertino, Calif., for a briefing on System 7.5 Update 2.0, and I came away feeling better about Apple than I have in a good while.

Then I installed it.

Usability to the fore

With hundreds of bug fixes and more native PowerPC code, the massive update is supposed to make all Macs more stable and Power Macs appreciably faster. But what I found most encouraging were many signs that Apple, despite some recent evidence to the contrary, hasn't forgotten about what is and must remain the essence of the Mac experience: usability.

Not that System 7.5.3 brings radical innovations to the Mac user interface; for those, we still have to wait for Copland. But it does deliver several long-overdue enhancements: Get Info comments are finally preserved when you rebuild the desktop; the Finder's list view is now wider; Desktop Mac users now get a fully supported version of the Control Strip; and the Open Transport control panels, though still pretty geeky, are more consistent and nicer-looking than those they replace. And then there's "translucent dragging" on Power Macs — seeing the names of an icon you're moving in the Finder is a pleasant surprise.

(A new Monitors & Sound control panel is supposed to be a big advance over the horrendous Sound & Displays, but it wasn't installed on my PCI-equipped clone.)

Particularly impressive to me were the steps the company has taken to respond to criticism about the state of the System folder. You still face a swarm of extensions and control panels, and some of the Open Transport components have kept names that would make you think you were in DOS if they weren't so long. But at least some of the accumulated patches have been consolidated, and a slew of read-me files now offer some clue about the remaining modules. And these notes are now separate files, so you can read them without installing or even downloading the whole update.

Best of all, Apple's installer now checks your folders of disabled extensions and disabled control panels and then updates what it finds there, instead of indiscriminately putting new versions in the active folders and leaving you to sort out the version-control issues.

Reality bites

All these small gestures add up to a very positive pattern, and I wish I could end on that note. Unfortunately, I have to confess that this user's actual experience with the update has been a nightmare. More on that soon. For now, one tip: Forget what you've always been told about starting up with the Shift key down before performing an installation; instead, use your extension manager to disable unnecessary components. If you don't, and you then launch the new Network Software Selector utility, you might find yourself face to face with a screen that almost sent me screaming in despair to Windows. □

Henry Norr, editor emeritus of MacWEEK, welcomes feedback in the MacWEEK forums on CompuServe or eWorld or at henry_norr@macweek.com.

GET YOUR OWN TO

FREE SUBSCRIPTION MacWEEK!

COMPLETE AND RETURN FORM.
A complimentary one-year subscription will be sent to applicants who qualify.
We can't process this form unless you:
1) answer all the questions completely
2) sign and date your form
3) use specific numbers when answering questions requesting quantities. Free subscriptions available in U.S. and Canada only.

Required: Full company name and company address must be written below or application cannot be processed. *Please print.* Military: please specify branch of service and name of base (if applicable).

First Name Last Name

Title Business Telephone

Company Name

Division Mail Stop Delivery

Street Address (Where you work) P.O. Boxes not accepted on this line.

City State Zip

Business Fax Number

Optional: DELIVERY ADDRESS (Home or P.O. Box). Enter address below only if your company WILL NOT accept delivery to the company address already listed. Address below is:
☐ A. Home ☐ B. Alternate Company Address

Post Office Box or Street Address

City State Zip

• **Please start/continue my FREE subscription to MacWEEK.**
☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location?
(Select one only) Write Answer Here ➡

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/ Broadcast
06. Commercial Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services
99. Other_____ (please specify)

2 What is your job function?
(Select one only) Write Answer Here ➡

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting
Z. Other_____ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐ 01. System 7
☐ 02. System 6, 5 or earlier
☐ 03. Unix/Xenix/AUX/AIX
☐ 04. PowerOpen
☐ 05. Windows 3.X
☐ 06. Windows NT
☐ 07. Windows 95
☐ 08. NeXTStep
☐ 09. Solaris
☐ 10. OSF/Motif
☐ 11. Other_____ (please specify)

Network Operating Systems
☐ 13. Novell NetWare
☐ 14. Unix/NFS
☐ 15. LAN Manager
☐ 16. Banyan VINES
☐ 17. AppleShare
☐ 18. DEC PathWorks
☐ 19. Other_____ (please specify)

Groupware
☐ 21. Lotus Notes
☐ 22. Windows for Workgroups
☐ 23. FirstClass
☐ 24. Novell GroupWise
☐ 25. Apple Open Collaboration Environment (AOCE)
☐ 26. Other_____ (please specify)

Database Engines
☐ 28. Oracle
☐ 29. Sybase SQL Server
☐ 30. Ingres
☐ 31. Informix
☐ 32. 4D Server
☐ 33. DB2
☐ 34. Other_____ (please specify)

On-Line Services
☐ 36. America Online
☐ 37. CompuServe
☐ 38. e-World
☐ 39. Prodigy
☐ 40. Internet
☐ 41. Delphi
☐ 42. Genie
☐ 43. Other_____ (please specify)

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply.) USE NUMBERS ONLY

	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1.☐
Apple Power Mac 7100	2.	2.☐
Apple Power Mac 6100	3.	3.☐
Radius Power Mac Compatible	4.	4.☐
Power Computing Power Mac Compatible	5.	5.☐
Daystar Power Mac Compatible	6.	6.☐
Other Power Mac Compatible	7.	7.☐
Macintosh Quadra	8.	8.☐
Macintosh Centris	9.	9.☐
Macintosh Performa	10.	10.☐
Macintosh PowerBook	11.	11.☐
Macintosh Duo	12.	12.☐
Macintosh Other (II, LC, SE, etc...)	13.	13.☐
Other Mac Compatible	14.	14.☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15.☐
PowerPC (Non-Mac Compatible)	16.	16.☐
Workstation (SPARC, MIPS, HP/Apollo, etc.)	17.	17.☐
Other Microcomputers	18.	18.☐

5A How many servers are installed at this *entire* location? (Use numbers only)

5B How many LANs are installed at this *entire* location? (Use numbers only)

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only)

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location? (Answer one only)

A. Retailer: Number sold per year_____
B. Reseller: Number resold per year_____
C. Consultant: Number purchased by your clients through your firm's recommendation per year_____
D. Other: Number sold/resold/recommended per year_____
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐ 01. Apple Macintoshes
☐ 02. Mac Compatibles
☐ 03. IBM Compatible Micros
☐ 04. Servers
☐ 05. Workstations
☐ 06. Minis/Mainframes
☐ 07. Newton PDA
☐ 08. Pen-Based Computers

Networking
☐ 10. LANs
☐ 11. WANs
☐ 12. Mac to PC Links
☐ 13. Mac to Mini/ Mainframe Links
☐ 14. Mac to Unix Workstation Links
☐ 15. Modems
☐ 16. Communication/ Network Software
☐ 17. Bridges/Routers/ Gateways
☐ 18. Hubs
☐ 19. NICS

Printers
☐ 21. Laser
☐ 22. Color Laser
☐ 23. InkJet
☐ 24. Color InkJet
☐ 25. Dye Sub
☐ 26. Thermal Wax
☐ 27. Plotter
☐ 28. Portable Printer

Image Input
☐ 30. Digital Camera
☐ 31. Flatbed Scanners
☐ 32. Handheld Scanners
☐ 33. Slide Scanners
☐ 34. Drum Scanners
☐ 35. Black/White Scanners

Displays
☐ 37. 14 inch
☐ 38. 15 inch
☐ 39. 17 inch
☐ 40. 21+ inch
☐ 41. LCD Projection Panel
☐ 42. Presentation Monitors

Peripherals
☐ 44. UPS
☐ 45. External Speakers
☐ 46. Input Devices
☐ 47. Video Deck
☐ 48. Image Setter

Storage
☐ 50. Photo CD
☐ 51. Magneto Optical
☐ 52. RAID
☐ 53. Hard Drive 1 Gig +
☐ 54. Hard Drive < 1 Gig

Add-In Boards
☐ 56. CD Recorder
☐ 57. Memory Boards
☐ 58. Display Boards
☐ 59. Video Digitizer Boards
☐ 60. Accelerator Boards
☐ 61. Sound Boards
☐ 62. MIDI
☐ 63. Video Capture/ Compression
99. ☐ None of the above

Your Signature _____

Title _____ Date ___/___/___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐ 01. Desktop Publishing
☐ 02. Electronic Publishing
☐ 03. Painting/Drawing Programs
☐ 04. Photo Retouching
☐ 05. Page Layout
☐ 06. Illustration Programs
☐ 07. Fonts
☐ 08. Pre-Press
☐ 09. Color Management
☐ 10. Digital Video
☐ 11. Other_____ (please specify)

Multimedia
☐ 13. Authoring Software
☐ 14. Video Editing
☐ 15. Sound Editing
☐ 16. Music Composition/ Editing
☐ 17. Animation
☐ 18. Clip Media (Sound and Art)
☐ 19. Other_____ (please specify)

Presentation Graphics
☐ 21. Presentation Software
☐ 22. Multimedia Presentations
☐ 23. Charting Program
☐ 24. Other_____ (please specify)

Design/Engineering
☐ 26. CAD/CAM
☐ 27. 2/D - 3/D Modeling
☐ 28. Simulation
☐ 29. Other_____ (please specify)

Business Applications
☐ 31. Word Processing
☐ 32. Spreadsheets
☐ 33. Databases
☐ 34. Project Management
☐ 35. Accounting/Payroll
☐ 36. Groupware
☐ 37. Desktop Video Conf.
☐ 38. Document Management
☐ 39. Mapping/GIS
☐ 40. Pen-Based Applications
☐ 41. Other_____ (please specify)

Systems Management
☐ 43. Operating Systems
☐ 44. Utilities
☐ 45. Applications Development
☐ 46. CASE
☐ 47. Programming Languages
☐ 48. Compilers
☐ 49. SQL Applications
☐ 50. Client Server Applications
☐ 51. Other_____ (please specify)
99. ☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement? (Select one only) Write Answer Here ➡

01. 2000+
02. 1000-1999
03. 500-999
04. 100-499
05. 50-99
06. 20-49
07. 10-19
08. 5-9
09. 1-4
99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other_____ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more
2. $2,500,000 to $4,999,999
3. $1,000,000 to $2,499,999
4. $600,000 to $999,999
5. $400,000 to $599,999
6. $200,000 to $399,999
7. $100,000 to $199,999
8. $50,000 to $99,999
9. $25,000 to $49,999
10. $10,000 to $24,999
11. Less than $10,000
99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A.	G.
Desktops/Portables (Micros/Workstations)	B.	H.
Networking Products (include Servers)	C.	I.
Peripheral Equipment	D.	J.
Software Products	E.	K.
Service/Support	F.	L.

✳ Indicate additional individuals at this location who might qualify for a FREE subscription to MacWEEK:

Name _____ Title _____

Name _____ Title _____

Name _____ Title _____

PLEASE BE SURE THAT ALL QUESTIONS ARE ANSWERED. V9601

C6NC-3

FOLD HERE FOR MAILING DO NOT STAPLE –TAPE HERE

CHECK ONE ONLY
- ☐ **ADDRESS CORRECTION**
- ☐ **NEW APPLICATION**
- ☐ **REQUALIFICATION**

Place stamp here. Post Office will not deliver without postage.

MacWEEK

P.O. Box 10632
Riverton NJ 08076-0632

FOLD HERE FOR MAILING DO NOT STAPLE –TAPE HERE

ADDRESS CHANGE?

Please provide your old address in the space provided below so that we may update your new mailing address promptly!

First Name | Last Name

Title | Business Telephone

Company Name

Division | Mail Stop Delivery

Street Address (Where you work) P.O. Boxes not accepted on this line.

City | State | Zip

REMINDER:

Complimentary Subscription Application

NOTE: A COMPLIMENTARY SUBSCRIPTION TO MACWEEK WILL BE SENT TO THOSE APPLICANTS WHO QUALIFY. PLEASE ANSWER ALL QUESTIONS COMPLETELY. INCOMPLETE FORMS WILL NOT BE PROCESSED. FOR QUESTIONS REQUESTING QUANTITIES, PLEASE USE SPECIFIC NUMBERS.

LETTERS

Accounting article audited

While I'm sure that there are some users who have been disappointed with their software selections, I disagree with the overall assertion that running your business on a Mac has to be a frustrating experience (02.26.96, Page 49). There are tens of thousands of happy small-business Mac users.

In all four examples, the Solutions article cites cases where users apparently were satisfied with their software choice until their businesses changed focus or grew. This introduced the need for enhanced functionality for which the original products were not intended. I do not think it is reasonable to criticize the products for not performing functions that were not originally anticipated.

The comment about naive customers spawning "a rich breeding ground for consultants" implies that these consultants are out to take advantage of the business owner. I can assure you, this is *not* the case. Most are knowledgeable and dedicated professionals who work hard to satisfy their customers' needs and expect to maintain a long-term business relationship with their customers.

Regarding the use of Apple servers, there are many studies that show that Macintosh servers offer dramatic advantages over Wintel solutions. For a small business that cannot afford a full-time IS person, the daunting complexity of a Wintel server and the loss of productivity due to downtime, Macintosh computers offer the more profitable and productive solution for small businesses.

Nancy Neipp
Executive director
Apple Business Consortium
Campbell, Calif.

OpenDoc adds up

Your Solutions article (02.26.96, Page 49) divided accounting software into basic, intermediate and advanced categories, and seemed to infer that to gain more-specialized features it is necessary to move up to a more expensive program. Isn't this exactly what OpenDoc is all about? Shouldn't it, a year or two from now, be possible to pick a "container" accounting program, or even a general container such as ClarisWorks, and add to it modules for credit card processing, hourly billing or whatever you need to create the accounting billing time-tracking inventory system your company needs? I admit this may sound a bit pie-in-the-sky, but I certainly hope this is the long-term plan because I can see no other affordable option for custom configuration of business software.

C. David Tobie
The Design Cooperative
Readfield, Maine

3-D dispute

In Michael Grabenstein's letter (02.12.96, Page 23) he writes, "QuickDraw 3D needs to be scuttled in favor of an OpenGL library." He also suggests that Apple might give Silicon Graphics Inc. rights to QuickTime in exchange for OpenGL.

Arguing for OpenGL in favor of QuickDraw 3D is like arguing for 8086 machine code in favor of C++. It's just a meaningless comparison, since the two things aren't even competing with each other. GL is like the machine code of the 3-D graphics world — it does not dictate your choice of which high-level language to use. You can compile your C++ into 8086 machine code if that is the processor your computer has, and you can run your QuickDraw 3D programs on top of GL drivers, if that is the graphics hardware that your computer has. If you want to make a comparison, Performer and Inventor are SGI's two competing products that are comparable with QuickDraw 3D, not GL. Further, SGI already uses QuickTime on all its machines, so offering them something they already have is silly.

Stuart Cheshire, research assistant
Stanford University
Stanford, Calif.

A dog of a name

Item one on Apple's Internet strategy should be to rename Cyberdog. Cyberdog is hardly a name that says "Advanced, cutting edge technology." Cyberdog would have made a good name for Windows 3.1.

The name Cyberdog has the ring of an employee's side project that was never meant to become commercial but is being forced out. The name definitely doesn't have a come-hither quality about it. At the very, very best, it sounds like an Apple-brand competitor for the Dogz program, which, I think, puts an animated learning pooch on your desktop. It sounds like it has nothing to do with the Internet.

When Apple is asked about its Internet strategy and it responds with "We've got Cyberdog," nobody's going to be impressed or likely even interested.

Jon Hendry
President
Steel Driving Software Inc.
Cincinnati

How to contact MacWEEK

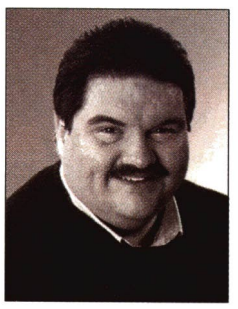
Send letters to MacWEEK, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3651. We can be contacted on-line: CompuServe, 76077,1351; eworld, MacWEEK; MCI, 323-1203; Internet, letters@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.

THE MAC MANAGER DON CRABB

Mac clobbers Windows 95 in SPA demo, but so what?

The results are in. A Power Mac crushed a Pentium-class machine running Windows 95. Fair and square. At the recent Software Publishers Association meeting, Apple evangelist Guy Kawasaki challenged Microsoft Corp. to a head-to-head contest. Microsoft bailed, but that did not stop Guy.

He recruited Jim Louderback, editor in chief of Windows Sources, to be the leader of Team Windows 95 (with one adult assistant). Guy and 10-year-old Max Stein played for Team Mac.



The contest pitted both machines in these timed tasks:

- Installing and setting up the systems, right out of the box.
- Installing an Iomega Corp. Zip drive.
- Installing a modem.
- Connecting a printer.
- Connecting to the Internet or an on-line service.
- Setting up and connecting to a network.
- Creating a file, saving it, then making a shortcut or alias of an application.
- Deinstalling an application.

The results

Not surprisingly, Team Mac won. Not at every task, but overall the Mac clearly dusted Windows 95 in these user-friendliness tests.

The tests showed that despite big gains in Windows 95 installation routines and the plug-and-play hardware standards, it's still no match for the Mac. Funny how Windows 95's pre-emptive multitasking doesn't help much when you can't get the damn hardware drivers for your brand-spanking-new sextuple-speed CD-ROM drive to work with the Installation Wizard.

When I asked Guy why he picked a kid to represent Team Mac, he said, "Apple doesn't believe in sending a man to do a boy's job." Of course, things could have been different if Microsoft had represented itself. But Guy had a plan for that, too: "If Microsoft had accepted the challenge, we would have used our secret weapon: Alex Stein. He's three years younger than Max."

Real results

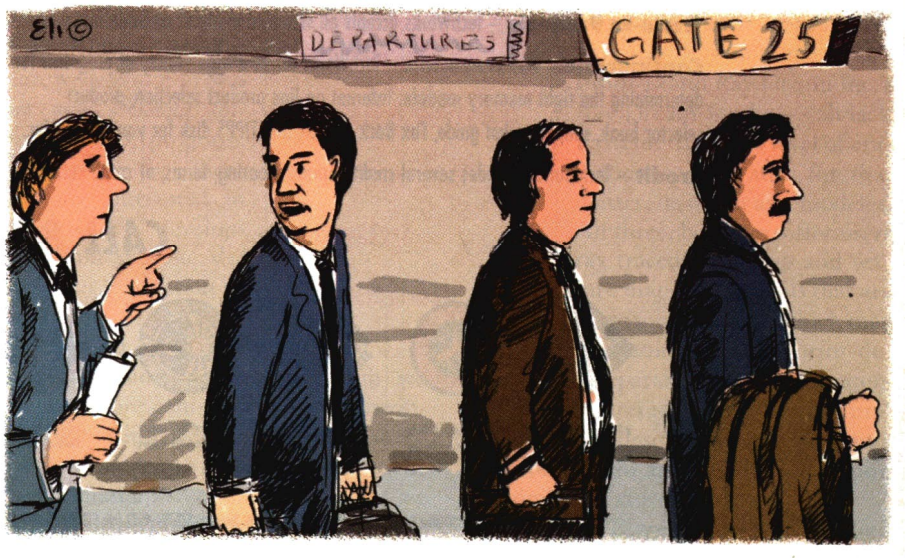
Nicely said, but did this SPA showdown do anything to help the cause of the Mac? I don't think so. While the SPA tests make for good public relations, especially in front of a roomful of developers, the results are not likely to convince anyone to buy a Mac, nor prevent anyone else from migrating to Windows 95 from the Mac.

Why? Because you could run the same kind of challenge and pick tasks that Windows excels at to make the counterpoint.

Consider, for example, this simple test. Take a Power Mac and Windows 95 Pentium, both with 1-Gbyte hard drives installed. Copy 5,000 files in 500 folders from one disk to another and time it. The results? The Windows 95 machine finishes in about 20 minutes. The Mac copy croaks just as it is starting, with a -29999 error, because the creaking old System 7.5.2 file system is just not up to the task.

I know all that will be fixed by Copland. (It had better be.) But my point is this: It's time to stop worrying about comparing the Mac to Windows at every turn. Instead, let's all focus on how the Mac delivers unique value and solutions in and of itself. We need to turn the argument around on the Windows folks and work from the position of strength. □

Don Crabb welcomes comments at his Internet address decc@cs.uchicago.edu. You can also check out his home page at http://cs-www.uchicago.edu/~decc/.



"This isn't the ticket line. We're waiting to use a phone plug and wall jack."

Comments? Ideas? Contact Eli at elitoons@aol.com

ARE YOU PAYING FOR MEMORY SURPRISES?

NOT WHEN YOU BUY TECHWORKS MEMORY. WE'RE YOUR GUARANTEED VALUE LEADER.

TechWorks has more than just good SIMM and DIMM prices. We save you money and time by exceeding your needs the first time around. Here's why TechWorks has been the recognized leader in Mac memory for almost ten years:

Quality Guarantee – TechWorks tests 100% of our products before they go out the door and backs them with a Lifetime Warranty and 24-Hour Replacement policy.

Support – TechWorks provides you toll-free, pre-sales and post-sales expert support.

Trade-In Program – TechWorks accepts all standard modules as trade-in.

Configuration Information – TechWorks offers a wide variety of programs for determining the right memory module: Internet on-line product selection, product selector book, simple pocket guide, Fax Back service, and TIPPS disk for your PC or Mac.

Credit – TechWorks provides several credit options: flooring, terms, or credit cards.

Education Series – TechWorks offers the following short, easy to read topics in printed, Fax Back and on-line formats, including: *Selecting the Right Memory, Cache Cards, VRAM, EDO/Burst EDO Memory and DIMM Memory.*

Robust Packaging – TechWorks individually labels and packages every module for easy identification and safe delivery.

Availability – TechWorks ships many standard memory modules within 24 hours of order.

TechWorks participates in the Apple Developer Program so we can engineer and manufacture memory that works for you all the time. We have memory upgrades for old, faithful Macs, new PowerPC Macs, and Mac OS-compatible computers. Pick TechWorks and rest easy—each TechWorks memory module is rigorously tested and covered by our Lifetime Warranty. The choice is clear. Call today and experience what the best value in the business can mean for you.

CALL 800-704-0189

It'll always perform, or we'll replace it free.

Technical Support? We're here to help you for free.

Don't like it? Return it. It's just that simple.

Problem? We'll replace it via overnight delivery.

Cash-back for most SIMMs & DIMMs.

Mac™OS

TECHWORKS

Web Site at http://www.techwrks.com
Fax on demand: 800-285-3084

TechWorks, 4030 West Braker Lane, Austin, Texas 78759-5319. Business: 512-794-8533, Fax: 512-794-8520. TechWorks U.K., 4 Dolphin Square, Edensor Road, London, W42ST. Business: +44 (0) 181 490 9500, Fax: +44 (0) 181 490 9501.

PB STORAGE

MacWEEK reviews three storage options for PowerBook 190 and 5300 users.
See Drive Update, Page 35.

New PowerBook Duo 2300c toes subnotebook line

By James Staten

Latest Apple Duo model is good but demonstrates a lack of imagination.

The new PowerBook Duo 2300c/100 is the first Apple subnotebook to carry a PowerPC processor, and it sports a larger active-matrix screen, but in most other respects it varies little from previous Duos. This is both good and bad: On the upside, it still has the slim, lightweight design of its predecessors, thus maintaining compatibility with most Duo accessories on the market. On the other hand, the 2300c lacks innovation and will likely do nothing to improve Apple's position in the laptop market.

Spec sheet

The Duo 2300c is driven by a 100-MHz PowerPC 603e processor. Like the PowerBook 5300 series, it lacks a Level 2 cache. The $4,499 configuration we reviewed includes a 1.1-Gbyte IDE (Integrated Drive Electronics) hard drive and 20 Mbytes of RAM. As in previous Duos, memory is expandable up to 56 Mbytes through just a single RAM slot, so any increase in RAM comes at the expense of all but the memory soldered on the motherboard. Thankfully, Apple supplied 8 Mbytes on the 2300's board, up from 4 Mbytes on the previous Duos. For those who plan on adding more than 20 Mbytes of RAM, the $3,499 configuration with 8 Mbytes of RAM may be a more attractive option.

The 2300c's 9.5-inch active-matrix color screen is a welcome addition. Like the Duo 280c's 8.4-inch color panel, this newer model can display eight-bit color at 640 by 480 pixels and 16-bit color at 640 by 400 pixels. Support for higher resolutions at 16-bit color is provided by many third-party docking products.

Besides the new screen, the Duo 2300c's most noticeable physical change is the long-awaited death of the minitrackball. In its place is Apple's TrackPad II, also included on the PowerBook 5300 series, which recognizes pointing and tapping actions. This device is infinitely more useful than the minitrackball, especially for precise movements required for photo editing or illustration work. The TrackPad provides full movement from one side of the screen to the other but tends to be a bit too sensitive to accidental touches when your other fingers graze the pad.

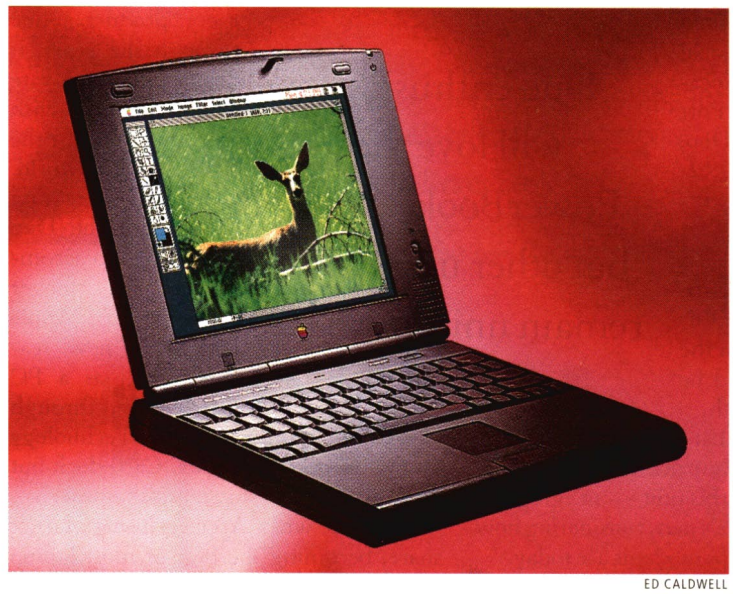
Delayed reaction

In three weeks of testing we never came across any problems with the 2300c, other than delays associated with the spin-up of the hard disk — a stark contrast to the woes associated with the initial release of the 5300 line (see story, Page 30). This can perhaps be attributed to the relatively little amount of engineering that went into the 2300c and to Apple's decision to delay its introduction from an expected October 1995 date to this past January's Macworld Expo.

Performance is roughly equivalent to that of the 5300c/100 running native applications and nearly matches the speed of the PowerBook 280c in emulation with Connectix Corp.'s Speed Doubler 1.1 installed. Without Speed Doubler, however, emulated performance is very disappointing; Apple really should offer to bundle this utility with every PowerBook.

Despite increased horsepower and screen real estate, battery life does not seem to suffer. Equipped with an Apple Type III nickel-metal-hydride cell, the Duo provided up to 3.5 hours when running a RAM disk with all conservation tactics in use (screen brightness turned down, hard disk spun down, AppleTalk turned off and modem turned off) and about one and a half hours of use with no power-saving tactics employed.

See Duo, next page



ED CALDWELL

Apple's PowerBook Duo 2300c/100 is the first Mac subnotebook with a PowerPC processor. While retaining the Duo's classic design, the new machine now features a larger 9.5-inch active-matrix color screen and Apple's newest TrackPad.

score card

PowerBook Duo 2300c

Apple
List price: $4,499*
Overall value ◆◆◆

Apple has finally brought the PowerPC processor to its Duos, which is good news, but increased performance probably won't be enough to convert many laptop buyers to the subnotebook line. Behind-the-times modem options and a lack of innovation in the now 4-year-old line make it less attractive as a solo notebook solution, but a mature collection of accessories available through third-party docking stations give it great expandability. Loyal Duo enthusiasts will also be pleased with the larger active-matrix color screen, the new TrackPad and better configuration options.

Performance ◆◆◆
Features ◆◆◆
Configuration ◆◆◆◆
Compatibility ◆◆◆◆
Documentation/support ◆◆◆

**For 20/1-Gbyte configuration; 8/750 configuration, $3,499.*

Key ◆◆◆◆◆ *Excellent* ◆◆◆◆ *Very good* ◆◆◆ *Good* ◆◆ *Fair* ◆ *Unsatisfactory*

Macromedia Extreme 3D moves to multimedia

By Sean Wagstaff

Distributed-rendering feature works well for lengthy animation.

When we beta tested Macromedia Inc.'s Extreme 3D earlier this year, we found it to be a fast and efficient all-around 3-D program, particularly for those who are interested in multimedia development and graphic design. Our evaluation of the $699 shipping version left us with much the same opinion, although we are now more confident that the distributed rendering works, and we're sufficiently pleased with the final version of the documentation.

This release propels Macromedia to the forefront of the current brand of 3-D animation programs targeted at multimedia users. Extreme 3D's competitors — Strata Inc.'s StudioPro, Specular International Ltd.'s Infini-D and Ray Dream Inc.'s Ray Dream Studio — all lack Extreme 3D's fine level of animation control and, for that matter, its depth as a modeler. All three, however, offer users ray traced rendering and texture mapping controls that are more sophisticated, which may split animators and print designers into separate camps. Animators will prefer Extreme 3D's fast procedural shading, while design-oriented users may want the realism afforded by ray tracing and complex texture mapping.

We tested Extreme 3D's distributed rendering on a small Ethernet network of

See Extreme 3D, Page 33

Duo

From previous page

All of the above is good news for Duo loyalists and subnotebook aficionados, but the biggest shortcoming of the 2300c may disappoint potential buyers.

The internal fax modem included with the device is Apple's aging Express Modem, still limited to 14.4 Kbps. Global Village Communication Inc.'s PowerPort Mercury for the Duo, which offers 19.2-Kbps throughput, fits inside the 2300c, but its software is currently incompatible with it. Global Village said a fix is in the works and should be released this month.

> Duo enthusiasts will love the PowerBook 2300c, but other users may remain unimpressed.

However, neither that company nor Apple said it had any plans to offer a 28.8-Kbps modem for this unit — an egregious oversight on Apple's part, considering how common 28.8-Kbps modems are today.

Conclusions

Apple's Duo design, innovative in 1992 when the first of the subnotebooks debuted, still has a strong appeal, and the PowerBook Duo 2300c is a good machine. A 4.8-pound, slim notebook without a floppy drive actually makes more sense now as the market has matured, becoming less dependent on disks and more network- and Internet-savvy. Furthermore, the many expansion options available for the Duo through companies such as Newer Technology Inc. of Wichita, Kan., make it perhaps the most flexible laptop on the market. But while Apple has evolved the product line through the years, it has failed to innovate or even keep up with its competition in the Intel-standard world. Other than increasing the size of the Duo Dock's bay to accommodate the thicker color screens, Apple added no new features, such as a PC Card drive, through its docking solutions. (Newer Technology said it is working on a PC Card dock but does not expect to ship it until summer.)

At a time when Apple is losing market share, becoming the butt of most laptop jokes and watching its competitors take home the design awards, this effort is somewhat of a disappointment. Duo enthusiasts will love the 2300c, but others may remain unimpressed.

Apple can be reached at (408) 996-1010 or (800) 950-5382; fax (408) 462-4396; http://www.info.apple.com. □

PowerBook performance

The PowerBook 2300c and the PowerBook 5300c with System Enabler 1.2.1 are both able Power Mac performers in terms of processor and floating-point speed but have more run-of-the-mill disk and graphics speed.

Power Mac-native CPU speed

Processor	Longer is better	6100/60*	Index
PowerBook Duo 2300c			11.06
PowerBook 5300c			11.68
PowerBook 540c			4.95

Processor speed in decimal math

Floating Point	Longer is better	6100/60*	Index
PowerBook Duo 2300c			13.75
PowerBook 5300c			14.20
PowerBook 540c			n/a**

Disk speed using general-purpose software

Disk Mix	Longer is better	6100/60*	Index
PowerBook Duo 2300c			7.57
PowerBook 5300c			8.05
PowerBook 540c			13.53

Graphics speed using general-purpose software

Graphics Mix	Longer is better	6100/60*	Index
PowerBook Duo 2300c			5.20
PowerBook 5300c			7.13
PowerBook 540c			5.22

Test configurations: The 5300c and 2300c were running System 7.5.2 with AppleTalk and virtual memory off. The 540c was running System 7.5.1 with AppleTalk and virtual memory off. Monitor resolution was set to 640-by-480-pixel resolution in 8-bit color.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.

**540c does not have a built-in math coprocessor.

PowerBook 5300c: What a difference a system update can make

Our review of the PowerBook 5300c was one of the worst we've ever given an Apple product. Frequent system crashes rendered not one but two of our systems unusable, causing us to pan the PowerPC portables. So when Apple released System Enabler 1.2.1 — a major bug fix to the 5300 series that includes a new Finder and emulator — we were compelled to give the PowerBook another shot.

While the problems that plagued our primary test unit cannot be overstated, neither can the recovery it made after we installed Apple's OS fix, which can be downloaded from several sites for free. The new system has worked flawlessly through eight weeks of hard testing.

Our other system is also running without a hitch. Unfortunately, a new hard drive and logic board had to be installed with the update before we could get it back on its feet.

score card

PowerBook 5300c*

Apple
Estimated street price: $3,500**
Overall value ♦♦♦

Performance	♦♦♦
Features	♦♦♦
Configuration	♦♦♦
Compatibility	♦♦♦♦♦
Documentation/support	♦♦♦

*With System Enabler 1.2.1.
**For a 16/750 configuration.

Return to the source

It seems most PowerBook 5300-series problems can be traced to two sources: a buggy operating system or flaws in early logic boards. Based on the hundreds of e-mail messages we've received from users, in the few cases where installing the update didn't fix the portable, replacing the logic board almost always did.

After fixing the two test units, our main complaints — frequent crashes, inability to send or receive faxes, card-recognition errors, compatibility problems, and poor performance — vanished.

The OS update, which when downloaded weighs in at 20 Mbytes, includes a new version of the 680x0 emulator, improved Finder caching and about a dozen other performance tweaks. While these don't suddenly transform the 5300c into a Pentium killer, the gestalt of the modifications add up to a much snappier system.

Thanks to the new caching scheme, for example, Power Mac-native Microsoft Word 6.0 runs faster on a 5300c than it does on a PowerWave 604/132 from Power Computing Corp. This is because System 7.5.2's Finder can cause long wait states when launching or running Word, a problem that's been addressed in the update.

The new caching algorithms are expected to be part of System 7.5.3. In fact, a lot of the components in the PowerBook update look suspiciously like they were cribbed from System 7.5.3.

In emulation, the 5300c is still hobbled by the lack of a Level 2 cache, an option we expect to see on some of the new PowerBooks due to ship this summer. However, things are dramatically faster than they were a few months ago: When we first reviewed the 5300 (see 12.11.95, Page 37), MacBench 2.0 showed a 100-MHz 603e-based 5300c in emulation running 90 percent slower than a 540c, which uses a 33-MHz 68LC040. The update kicks up 5300c emulation scores to slightly faster than a 540c — a stunning update. With Connectix Corp.'s Speed Doubler 1.0.2 installed, 5300c emulation beats the 540c by about 33 percent. And, unlike the earlier version of Speed Doubler, Version 1.0.2 and the new PowerBook OS work well together.

Conclusions

Having worked with the portable before and after the system update, we can safely say that the 5300c user experience is now vastly improved.

Our impressions of the PowerBook's design remain the same — the 10.4-inch color active-matrix display is still great, the industrial design is still PC-wannabe, and we still miss on-board Ethernet and two speakers.

However, now the 5300c works. Its performance is what we expect from the first PowerPC-based PowerBooks: emulation as good as or slightly better than its fastest 680x0 predecessor with native performance more than three times the 540c's best score. Even features such as PC Cards are beginning to grow on us since we no longer risk crashing the portable every time we insert a card.

The 5300c's price is also more reasonable, with the street price on a 16/750 configuration running just under $3,500, $1,000 less than four months ago.

The decision to buy a 5300c is now much simpler, but it won't be for long. Apple's second wave of PowerPC portables, due to arrive in a few months, is expected to offer greater performance, a more dramatic look and an optional 5.25-inch CD-ROM drive. If these features are important to you, you should wait. However, if you need that new portable now and can forgo an internal CD-ROM drive, the PowerBook 5300c is a reasonably priced, safe option.

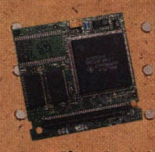
System Enabler 1.2.1 can be found at http://www.macos.apple.com/pbupdate.7.5.2 and on America Online, AppleLink, CompuServe and eWorld. PowerBook users can also call (800) 273-4035 and request either a free CD-ROM or a free set of floppy disks with the update.

Apple can be reached at (800) 767-2775.

— By Andrew Gore

PowerBook® Tools from Newer®

Get your 500 series PowerBook tooling along at 5300 speed with NUpowr.

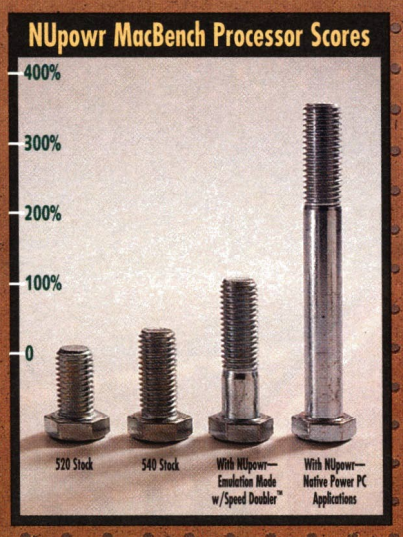


Don't settle for less than PowerPC speed with your PowerBook 500 series computer. NUpowr replaces the 4MB 040 processor in your PowerBook 500 with a 117MHz 603e PowerPC with either 0MB, 4MB or 8MB of RAM for up to 360% faster performance. So you can get 5300 performance for only a fraction of the cost. And, for a limited time, NUpowr is bundled free with Connectix® Speed Doubler™.

UltraDock: A workbench full of tools for your PowerBook Duo®.

The UltraDock 16sce is so loaded with ports for desktop features, it's like a portable workbench for Duo users. With UltraDock, you can connect to a color monitor, an Ethernet network, SCSI devices, external speakers – even a floppy drive. Or if you want to add just one desktop feature, snap on a pocket-size Newer MicroDock™. Choose from Color, SCSI, Ethernet or Floppy Drive. Each one includes an ADB port for a desktop keyboard.

INTRODUCING NUPOWR™ AND ULTRADOCK™ THE LATEST IN A FULL LINE OF POWERBOOK POWER TOOLS.



Or build a stacked deck of PC Cards for PowerBooks.

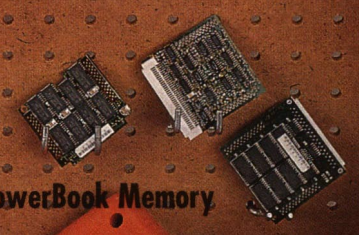
We've got the largest selection of PC cards for the Mac™ including 28.8 data/fax modems with cellular capability, 10BaseT Ethernet, video-in/capture cards and Flash RAM in 5MB, 10MB, 20MB, 30MB and 40MB sizes for Macs or digital cameras.

And Newer has always been on the cutting edge of memory. So tool up, PowerBook users. With power tools like these, who needs desktops?

Newer® TECHNOLOGY

1-800-678-3726
316-685-4904
Fax: 316-685-9368
E-Mail: sales@newertech.com
Website: http://www.newertech.com

800-678-3726



PowerBook Memory

Docking Solutions

Newer Technology is a registered trademark of Spectrum Engineering. NUpowr, UltraDock, MicroDock and EtherTech are trademarks of Newer Technology. PowerBook, PowerBook Duo and Mac are trademarks or registered trademarks of Apple Computer Company, Inc. All other product names are trademarks or registered trademarks of their respective holders. ©1996, Newer Technology.

INGRAM MICRO

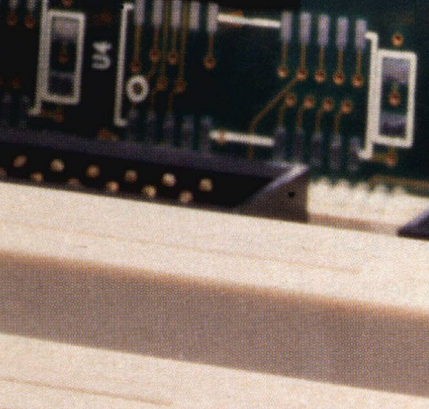
INNOVATORS IN POWER & PERFORMANCE

Lifetime Warranty On Memory

Toll Free Technical Support

30-Day Money Back Guarantee

100% Guaranteed Compatible



Call Centon today to get your free copy of our Electronic Memory Guide disk: "Pathfinder Plus."

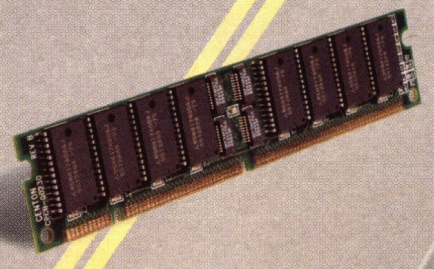
Centon and the Centon logo are registered trademarks of Centon Electronics, Inc. All other brand names and trademarks are property of their respective owners.
©1996 Centon Electronics, Inc.

Before You Travel the Crowded Road of Memory Upgrades, Consider This:

- **Centon's experience:** we've been in business for over 18 years.
- **Centon's selection:** we carry over 1,500 different modules.
- **Centon's warranty:** all products come with a lifetime guarantee.
- **Centon's commitment:** we're an authorized Apple Developer, Sun Licensee and a partner in IBM's warranty program.

So why not bypass the other memory suppliers? Take the ***Memory Expressway*** to unparalleled service, aggressive pricing and guaranteed product.

After all, for memory upgrades, all roads lead to Centon Electronics.



Pictured is a Centon manufactured memory module for the Apple PowerPC Series. Call Centon today for pricing and memory configurations on hundreds of other Apple compatible upgrades.

1-800-836-1986

CENTON® ELECTRONICS, INC.

Centon Electronics, Inc. Irvine, CA (714) 855-9111 Fax (714) 855-6035 http://www.centon.com

Proudly distributed by:

1 (800) 255-4489 AmeriQuest
1 (800) 223-7081 AmeriQuest/Robec

AMERIQUEST COMPUTER 2000 GROUP

INGRAM MICRO

"Leading The Way In Worldwide Distribution"
1 (800) 456-8000

Extreme 3D

From Page 29

Power Macs and found it to be very useful for speeding along animation jobs.

Render bender

In some ways, Extreme 3D mimics Renderama, the distributed-rendering component of Electric Image Inc.'s ElectricImage Animation System. To set up a batch rendering, you simply install Extreme 3D on every machine on the network, then mount a common volume, such as a server hard disk, on all of them. You then launch the program on those machines and set them to operate in Server Mode. You queue rendering jobs from the animator's Mac; the jobs are parceled out one frame at a time to each of the server machines.

This scheme is efficient and works very well for lengthy animations or when you need to offload rendering tasks to another computer, but we found the setup cumbersome (particularly because of the poor documentation and confusing nomenclature for this feature.) It is also not worth your time for very short animations, since there is considerable overhead in copying the necessary files to the rendering servers.

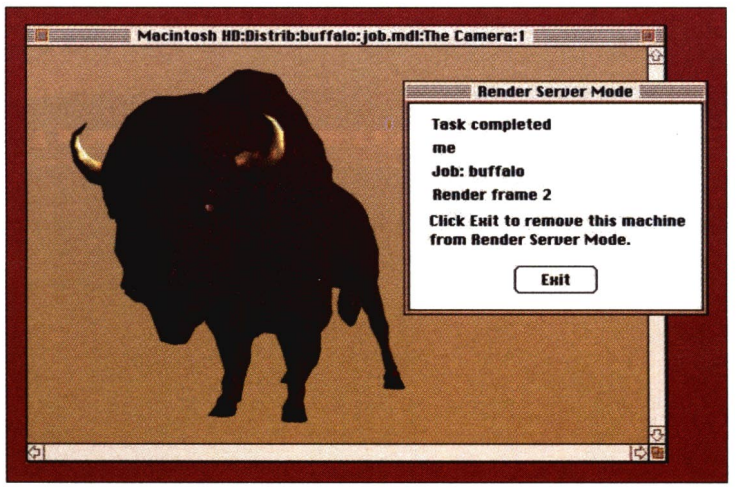
The distributed renderer won't render directly to a QuickTime movie, so you'll have to take the extra step of compositing the movie in a program such as Adobe After Effects or Adobe Premiere, which can be a major inconvenience.

Despite the problems with the documentation for the distributed renderer, the documentation for the program overall is fairly thorough. The support materials include a useful CD-ROM tutorial as well as a separate CD-ROM of textures from Form and Function.

Modeling and animation

As we reported in our Beta Test (see 01.22.96, Page 1), Extreme 3D's modeling is good, although it's not particularly brimming with features. Even compared to low-cost programs such as The Valis Group's Pixel Putty Solo or Yonowat Inc.'s Amapi, Extreme's modeling tool set is somewhat small. On the other hand, it's very good in terms of numeric control grouping — a weak function in other Mac spline modelers.

As an animator, Extreme 3D is quite robust, especially for a 1.0 release. The level of animation control makes it the first Mac program that begins to challenge ElectricImage Animation System, particularly in the capability to animate parameters of an object (such as x and y rotation) independently.



Macromedia Extreme 3D's distributed rendering is very useful for speeding along lengthy animation jobs. Here, the Render Server Mode dialog box reports the status of remote and local render servers.

We're disappointed with Extreme 3D's lack of support for Apple's QuickDraw 3D and 3DMF (3-D metafile format). While the application's modeling environment does offer very fast smooth-shaded preview rendering, its quality is a far cry from what we've seen with early versions of QuickDraw 3D combined with low-cost hardware. Macromedia said the program will incorporate both QuickDraw 3D and 3DMF in the future.

Reflections on textures

We were pleased with Extreme 3D's rendering quality, particularly for matte surfaces and plastics. Reflectivity is handled by the Chrome+Glass or Mondo Map shader types, which let you assign an environment map that will be reflected on the final shape. There is no option to automatically render an environment map, so to render an object that reflects the surrounding scene you'll have to manually render views of the surroundings, then composite them into an environment in a program like Adobe Photoshop.

This limitation is part of a complaint we have with Extreme 3D's texture mapping in general. Instead of having all texture-mapping features available to you in any single texture, Extreme 3D limits you to different shader types, each of which has its own set of parameters.

This is reminiscent of the way Pixar's RenderMan shaders work, which is ironic, since Macromedia has abandoned support for RenderMan. Unfortunately, Extreme 3D's shaders aren't anywhere near as flexible or customizable as those found in RenderMan. In StudioPro, Ray Dream Studio and Infini-D, you can overlay many different texture qualities (such as luminance, reflectivity, bumpiness and specularity) to achieve a texture that exactly meets your specifications. In Extreme 3D, you use the Mondo Map to achieve this layered effect, using gray-scale maps to adjust the Surface, Bump, Environment and Specular values. While this works, it offers much less detailed control than the other products.

The upside of Extreme's dependence on procedural shaders is the effects you can create with them. For example, the Organic Magic shader lets you apply two different materials with a complex blended pattern that resembles marble or camouflage, depending on how it is used. If you cut into this surface, you'll see that it's a solid texture that is consistently applied to internal portions of the model as well. The capability to use procedural shaders also allows Extreme 3D to offer volumetric (glowing) light sources, which significantly improves options for rendering realistic scenes.

Conclusions

We like Extreme 3D as a spline modeler and animator, and think many multimedia makers will find good use for the product. The distributed-rendering feature has a few quirks but is helpful for long animations or for offloading rendering jobs to idle computers. The price is in line with the current competition, and Macromedia goes a step further by offering the $1,999 Director Multimedia Studio 2, an excellent bundle of Director 5, Extreme 3D, xRes 2.0, SoundEdit 16 2.0 and Deck II 2.5.

Illustrators may find the program limiting compared with Infini-D, StudioPro or Ray Dream Studio — particularly when it comes to texture mapping and realistic rendering — but this is very much a matter of taste. Animators, particularly those involved in multimedia production, will find Extreme 3D a very good value.

Macromedia Inc. of San Francisco can be reached at (415) 252-2000 or (800) 989-3762; fax (415) 626-0554; http://www.macromedia.com. □

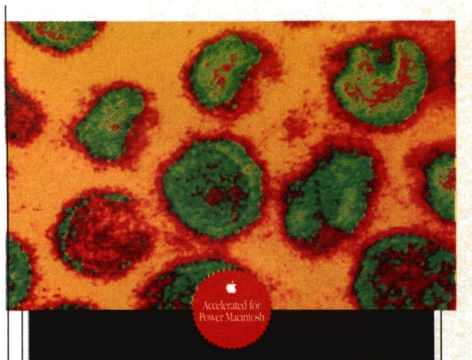
score card

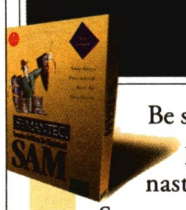
Extreme 3D 1.0

Macromedia Inc.
Overall value ◆◆◆◆ **List price: $699**

Macromedia's new modeler and animator is a very good initial release. It offers robust spline modeling with a limited feature set but a good level of control; spline-path animation with a very rich time line; and fast, good-quality Phong rendering. The distributed-rendering feature is useful for processing long animation jobs or for offloading rendering jobs to idle computers, but it has a few quirks and is not worth the effort for smaller animations. Overall, Extreme 3D is not a perfect tool, and it may prove somewhat limiting to illustrators who may want the realism afforded by ray tracing and complex texture mapping. However, its features will satisfy the demands of many animation jobs.

Performance ◆◆◆◆ **Ease of use** ◆◆◆
Features ◆◆◆◆ **Documentation/support** ◆◆◆





Be safe with constant protection from nasty viruses with Symantec AntiVirus™ 4.0 for Macintosh (SAM™).

PowerMac native, SAM will scan each and every file, compressed or not. It'll stomp out viruses from floppies, Internet files, even your office e-mail. Only SAM users can set their Macintoshes to automatically update virus protection simply by connecting to our BBS site. Once your Mac is set, you won't have to worry.

Call 1-800-695-0679 ext. 9CC2, or visit our Web site at www.symantec.com. And stop the viruses before they try and stop you.

SYMANTEC.

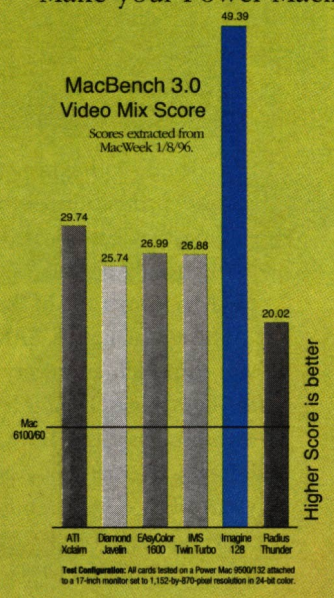
Symantec is a registered trademark and Symantec AntiVirus and SAM are trademarks of Symantec Corporation. Macintosh is a registered trademark of Apple Computer, Inc. ©1996 Symantec Corporation. All rights reserved.

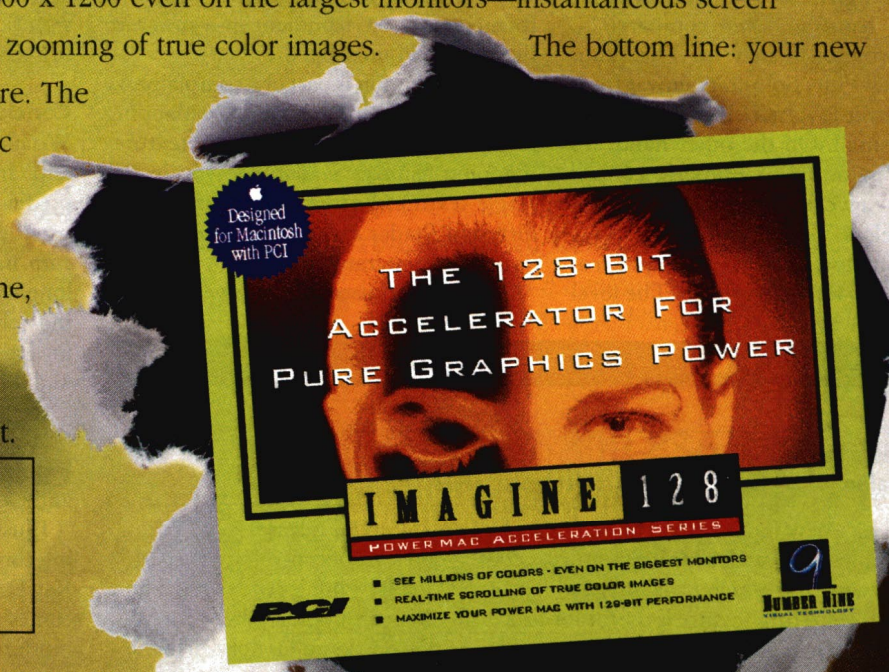
Corporate Evaluation Available.
Call 1-800-474-3686 For Details.

NUMBER NINE
VISUAL TECHNOLOGY

OUR NEW 128-BIT GRAPHICS ACCELERATOR. IT'S PRIMAL SCREAM THERAPY FOR YOUR POWER MAC.

Make your Power Macintosh™ with PCI scream, without paying those ridiculous prices. Get the Imagine™ 128 graphics accelerator. It's the only 128-bit board in the world. And it won't hold your Power Mac back like those puny 64-bit boards. That's because only the Imagine 128 gives you the power of 128-bit graphics, a 128-bit internal data path and a 128-bit memory bus. So you'll see millions of colors at ultra-high resolution—up to 1600 x 1200 even on the largest monitors—instantaneous screen redraw, real-time scrolling and zooming of true color images. The bottom line: your new Mac will move like never before. The Imagine 128 for the Power Mac PCI is available with 4 or 8MB of high performance VRAM brought to you by Number Nine, a leader in high performance graphics accelerators. Call us for more info today. And see what all the yelling's about.




Designed for Macintosh with PCI
THE 128-BIT ACCELERATOR FOR PURE GRAPHICS POWER
IMAGINE 128
POWER MAC ACCELERATION SERIES
SEE MILLIONS OF COLORS - EVEN ON THE BIGGEST MONITORS
REAL-TIME SCROLLING OF TRUE COLOR IMAGES
MAXIMIZE YOUR POWER MAC WITH 128-BIT PERFORMANCE
PCI
NUMBER NINE

Make Your Power Mac Scream
Call 1-800-GET-NINE
http://www.nine.com

Available At: **The Mac Zone** (1-800-248-0800)
Computer City (1-800-THE-CITY)
CompUSA (1-800-COMP-USA)

Imagine 128 and Number Nine are trademarks of Number Nine Visual Technology.
All other trademarks are property of their respective companies. ©1996 Number Nine Visual Technology Corporation.

PERFORMANCE RAISED TO THE POWER OF 9.

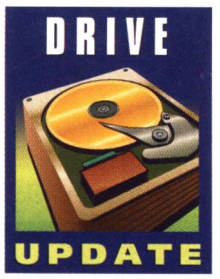
Fast, convenient storage options for PB 5300s, 190s

Overall value:

SanDisk 85 MB FlashDisk ◆◆◆

Simple Technology 170 MB DataCard ◆◆◆◆

VST PowerBook Expansion Bay Hard Disk ◆◆◆◆



Now that PC Cards are finally available for some Apple PowerBook models, mobile Macintosh users have a greater range of fast and convenient storage options. We looked at two PC Card storage devices available for PowerBook 190 and 5300 users — SanDisk Corp.'s 85 MB FlashDisk and Simple Technology Inc.'s 170 MB DataCard — which use different drive technologies to different degrees of success. We also looked at another storage option for 190 and 5300 users, VST Power Systems Inc.'s PowerBook Expansion Bay Hard Disk, which uses the built-in expansion bay where the floppy disk drive normally resides. For some users this might be a better solution because it offers higher capacity and a lower price than a PC Card.

SanDisk FlashDisk

One of PC Cards' best tricks is squeezing high-end features into small, portable devices. While the DataCard offers very good performance, SanDisk's 85 MB FlashDisk PC Card Drive goes even further. The FlashDisk is solid-state, so there are no moving parts to slow performance (or wear out). In fact, in our tests, the FlashDisk outperformed the PowerBook 5300ce's internal hard disk by about 71 percent.

With "solid-state" technology, all data is saved to a set of nonvolatile memory chips that the computer treats like an IDE (Integrated Drive Electronics) hard disk. In other words, the FlashDisk acts just like the start-up hard drive in your PowerBook. Solid-state technology also means that the card is not subject to the jolts, bumps and other insults prone to other removable or portable media types. We don't suggest you try this at home, but in our tests, the FlashDisk withstood multiple five- or six-foot drops onto concrete without harm. A rotating-disk PC Card drive, or even most removable hard disk cartridges, wouldn't survive a single drop from half that height.

The trade-off is the cost. With street prices for the FlashDisk ranging from $2,300 to $2,500, this comes out to about $28 per megabyte. Even though prices are dropping (down from about $60 per megabyte a few years ago), this is still expensive enough that it makes sense only for professionals with high-capacity storage needs, such as digital camera users.

Simple Technology DataCard

Miniaturization in computer devices is usually accompanied by slower performance, but there are exceptions. Simple Technology's 170 MB DataCard provides good capacity with the same speed and response you're used to with an internal hard disk. In fact, in our tests, the DataCard performed on average almost exactly like the internal 1.1-Gbyte hard drive in our PowerBook 5300ce.

PC Cards tend to demand a premium cost, but because the DataCard's two-platter design has been around for a while, the price is relatively reasonable: $399, or $2.30 per megabyte.

The floppy disk and documentation that accompany the DataCard are pretty useless for Mac users. The floppy disk carries PC Card drivers for Intel-standard PCs, and all but the last page of the documentation deals with PCs as well. That page does mention that the card may need to be initialized for a Mac, but it doesn't mention that PC Exchange, if enabled, won't let you initialize the DataCard as a Mac disk. We finally realized that we had to disable PC Exchange via the Extensions Manager before inserting the DataCard for the first time.

The DataCard is especially useful in situations where large files, such as presentations or intricately linked data files, need to be stored, delivered and run from the same device. It's also useful if portable alternatives, such as Iomega Corp.'s Zip drive, are too inconvenient to carry with you.

VST Expansion Bay Hard Disk

If you need more storage space than what's available on PC Cards and want better performance than the PowerBook's internal drive, there's another alternative. VST Power Systems' $879.95 PowerBook Expansion Bay Hard Disk is a removable hard disk module designed to slip into the PowerBook 190 and 5300 series' expansion bay, offering light weight, good performance and high capacity.

Three sizes are available in the series: 500 Mbytes, 800 Mbytes and 1.2 Gbytes. We tested the latter, which formats to just over 1.1 Gbytes of available storage and performs almost 30 percent faster than the 5300's internal disk.

The VST drive's biggest drawback becomes apparent when you want to load software from a floppy disk onto it. Because the floppy drive resides in the same expansion bay where the Expansion Bay Hard Disk fits, you have to decide which one is going to be in the machine at any one time. Some software installation disks can be copied onto the internal hard disk and installed on the VST disk from there, but other software installs only from its floppy distribution disks. If that's the case, you'll have to try copying the installed software from the internal hard disk.

As an auxiliary storage device, the VST drive is easy to handle and performs very well. Users who need an alternative drive to start up their PowerBook 190 or PowerBook 5300 will find this particularly well-suited to their needs.

Conclusions

For PowerBook users looking for the latest and greatest storage devices, PC Cards are convenient but somewhat restricted in capacity and currently cost more per megabyte than any alternative technology.

Solid-state storage such as the SanDisk FlashDisk is extremely expensive, although it is very fast. Until the price per megabyte drops further, there are only a few, narrow uses in which this kind of device is the best choice. Simple Technology's 170 MB DataCard is a rotating-disk drive that is much more reasonably priced without exhibiting a significant drop in performance.

Easiest to defend among these products is the VST PowerBook Expansion Bay Hard Disk, which offers high speed and much greater capacity than PC Cards. However, some users might be bothered by the inconvenience of having to swap out the floppy drive.

SanDisk Corp. of Santa Clara, Calif., can be reached at (408) 562-0595; fax (408) 562-3403; info@sandisk.com; http://www.sandisk.com.

Simple Technology Inc. of Santa Ana, Calif., can be reached at (714) 476-1180 or (800) 367-7330; fax (714) 476-1209; http://www.simpletech.com.

VST Power Systems Inc. of Concord, Mass., can be reached at (508) 287-4600; fax (508) 287-4068. — *By Nathan Garcia*

MACWEEK MACBENCH 3.0 LABS

PowerBook storage options

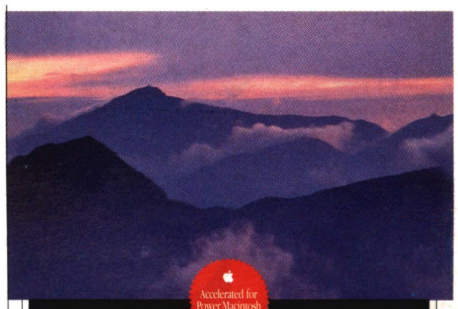
SanDisk's solid-state PC Card provides the fastest performance among the PowerBook storage devices we tested – but it's also the most expensive. All devices performed about as well or better than the 5300's internal drive.

Disk speed using general-purpose software

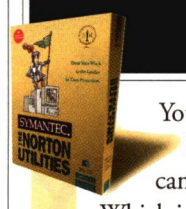
Disk Mix	Longer is better	6100/60*	Index
SanDisk 85 MB FlashDisk			14.61
Simple Technologies 170 MB DataCard			8.45
VST Expansion Bay Hard Disk			11.00
5300ce internal hard disk			8.51

Test configuration: All tests performed on a PowerBook 5300ce with System 7.5.2 and 32 Mbytes of RAM.

*MacBench's score compares speed to a Power Mac 6100/60, which receives a 10.



YOU BOUGHT A MACINTOSH TO TAKE YOU TO A HIGHER LEVEL. NOW MAKE SURE LOST WORK WON'T RUIN THE TRIP.



Your Macintosh may be intuitive, but it can't detect trouble. Which is where the award-winning Norton Utilities™ 3.2 for Macintosh comes in.

It scans automatically, finding and fixing problems before they escalate. It can suggest proactive disk maintenance for optimum performance. And should a major disaster ever occur, Norton Utilities will quickly restore all your data. And on top of that, it's PowerMac native, too.

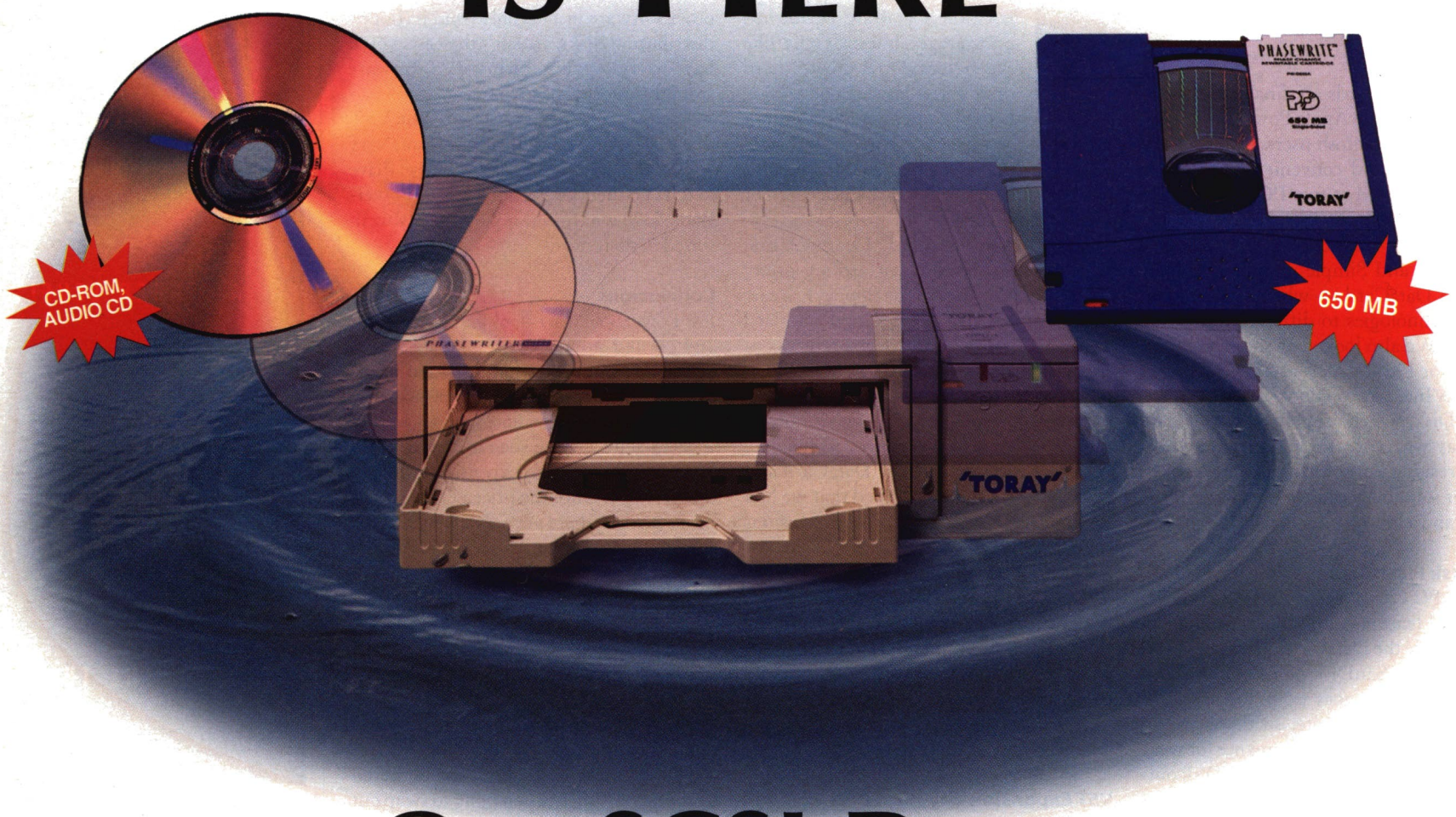
For more info, call 1-800-695-0679 ext. 9CC3, or visit us at www.symantec.com. And have a safe trip.

MacUser August 1995

SYMANTEC.

Symantec is a registered trademark and Norton Utilities is a trademark of Symantec Corporation. Macintosh is a registered trademark of Apple Computer, Inc. ©1996 Symantec Corporation. All rights reserved.

THE *NEW* PD STANDARD IS HERE



ONE SCSI DRIVE
BOTH 4X CD-ROM AND REWRITABLE OPTICAL

It's the Phasewriter Dual™ with PD technology from Toray and it transcends existing standards with more flexibility than any other optical drive. Phasewriter Dual reads CD-ROMs at quad speed and reads or writes to optical disks at a blistering .87 MBytes/second transfer rate. Just drop a CD-ROM into our new Phasewriter Dual or switch to a 650 MByte single-sided rewritable disk for portable data exchange. The Phasewriter Dual is setting new standards with higher capacity and CD-ROM compatibility at a much lower cost.

And it's Fast, Fast, Fast!
Plug this drive into any platform hardware or network and you're ready to go.

The single front loading tray holds CD-ROMs or Toray's CD-size rewritable optical (PD)disks. Because it is a SCSI drive, the software identifies and mounts either media automatically.

For information on drives, media or the retailer nearest you, call **1-800-TORAY-PD**.

PHASEWRITER DUAL™

by

'TORAY'

email: info@toray.com Internet: http://www.toray.com

©1995 Toray Marketing & Sales (America), Inc.

reviews FORUM

Natural roast

For years we have looked to MacWEEK to provide honest, unbiased assessments of new products. Therefore, we were highly disappointed when we saw the beta review of Roaster (see 02.19.96, Page 1).

As software publishers we can understand and accept a poor review of our product. We may disagree with some of the details, but if the author has overall presented an accurate, thorough evaluation, we look at it as a motivation for working harder. Unfortunately, your review conveyed an incomplete and sometimes inaccurate picture of the product. For example:

- You included major factual inaccuracies in the article. For instance, you complained that the user must include the AppletViewer.class file in each project and set it as a start-up file. Actually, Roaster automatically sets the AppletViewer.class file as a start-up file, precisely so the user does not have to include the file. A call to technical support would have cleared up this misunderstanding.
- You also mention the "clunky" interface, while lauding the editor. We found this comment surprising, as the editor happens to be the area where developers will spend 80 percent to 90 percent of their time. Also, we did not get any further details about what makes the rest of the interface clunky.
- You complain about the lack of complete Roaster compiler error messages. We clearly state in the release notes that developers should stick to using the javac compiler for production code and use the Roaster compiler only for experimentation, as it is not quite ready for prime time.
- You say that the applet runner is very buggy. However, at the time that you did your fact checking, Roaster DR1.1 had been freely available on the Web for a full week, only four weeks after the initial DR1 release. This update fixed many of the applet runner problems that you encountered. Unfortunately, you chose to run with the review, rather than do a proper evaluation of the product.
- The comment that may have disturbed us the most occurred when you twice pointed out Roaster's lack of HTML-specific editing features. Roaster is not an HTML editor. Natural Intelligence has never claimed otherwise. Roaster is a development environment for Java programmers. You seem to have completely missed the fact that Roaster DR1, warts and all, lets you write, edit, compile and run Java applets on a Mac.

Although we don't expect special treatment because we delivered Java tools to the Mac community a full six weeks before even Sun Microsystems Inc. did, we do expect a fair and complete review of Roaster. Unfortunately, on this count, it seems that MacWEEK has missed the boat.

Joshua D. Wachs
President
Natural Intelligence Inc.
Cambridge, Mass.

MacWEEK replies:
Roaster does set the AppletViewer.class file automatically through the Preferences dialog box, but the lack of a visual clue, plus contrary instructions in the documentation, led to this error on our part. While we did indeed like the editor, Java is just one ingredient in Web-page design, which is why we considered it important to look at the HTML-enabled capabilities of the editor and development kit.

The purpose of MacWEEK's Beta Tests is to give our readers an early assessment of products in the works — not to pass final judgment. We were heartened by the speed and facility with which Natural Intelligence released Roaster DR1 and 1.1 and, as we noted in the review, consider it a very promising product.

However, because the company is charging developers $299 for this work in progress, we wanted to alert readers to the fact that what they're purchasing is, in fact, a work in progress.

PowerCurve pros, cons

Finally! After reading about what a great new company Power Computing Corp. is, it's refreshing to see an honest article where the reviewer doesn't hold back when it comes to customer issues (see 03.04.96, Page 29).

I was initially impressed with an early version I saw of the Power 100, so much so that I opted for a Power 120 for the cognitive psychology lab where I work. It took Power Computing about two months to send us the machine.

Every time I called for an update it was the same thing: "We can't find that P.O." "Our system is down." "Your machine has to be remanufactured due to a heating problem." Every week the ETA was the same: "Should be there next week." It would be hard to estimate how long I spent on hold.

The kicker came when the machine finally showed up. It arrived with the Swedish accessory kit for the PowerWave machines, which meant it included the wrong manual and an incompatible power cord. When I requested and got the appropriate accessories, the machine just didn't work. No chimes of doom, nothing. Rather than deal with this nightmare any longer, I returned it for a refund and went with a Power Mac 7200/90. The performance may be a little slower, but the prompt customer service and overall attitude make it a better investment.

Kraig Finstad
University of New Mexico
Albuquerque, N.M.

In the review of the PowerCurve 601/120, there's a part subtitled "Fly in the ointment" that besmirches the company's customer support.

As a very happy owner of the new PowerCurve I just wanted to cast my vote in favor of Power Computing's customer support. Despite the freak ice storms in Texas, they delivered my machine to me in the amount of time they said it would take at the time of purchase.

Every time I called, I received courteous, helpful support. There were little things left out of the shipment, such as the EMI choke for the monitor, but when I called, they were very quick to send one to me with no hassles at all. It sometimes takes quite a while to get through to a representative, which can be a bit frustrating, but considering the volume of calls and orders they must be receiving, they're doing an excellent job.

Aaron Culich
Amherst, Mass.

Serve yourself

I am afraid I must disagree with your review of the new Apple Network Servers (see 02.26.96, Page 1). They do not "hit the nail on the head." What's the point of Apple releasing these machines? They're just Unix servers. Who would choose an Apple Unix server when they could buy from a company that's been doing Unix forever, such as Silicon Graphics Inc. or Sun Microsystems Inc.?

Apple is basically saying, "The Mac OS is not robust enough to use as a server." Apple's most powerful server no longer runs the Mac OS, and that's a sad sight.

This server does not fill any of my needs. I want an extremely fast Macintosh server, not an extremely fast Unix server. If I wanted a Unix server, I'd buy another Sparc20! I want a fast server with the Mac OS' ease of use and consistent interface. And that need still goes unfulfilled.

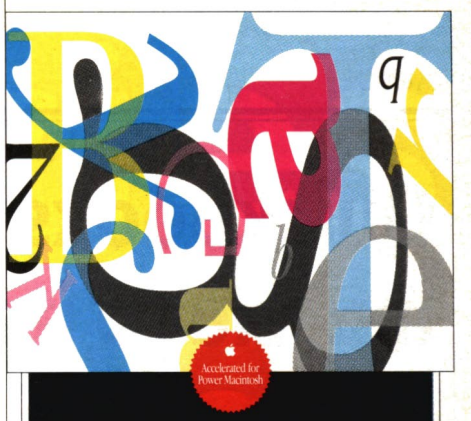
Justin Tomich
Systems analyst
Chiron Corp.
Emeryville, Calif.

Go, dog, go

You hit the nail squarely on the head with your review of Cyberdog (see 03.04.96, Page 1). A promising start, but still many deficiencies. I think that it is essential for Apple to stake its claim on the Internet front with an operating system that gives users the fundamental tools with which to use this new technology, much as has been already accomplished with Windows 95.

Dr. Robert D. Rakov
U.S. Air Force
15th Medical Group/Flight Medicine
Hickam Air Force Base
Hawaii

Send your comments to MacWEEK Reviews Department, 301 Howard St., 15th Floor, San Francisco, Calif. 94105; fax (415) 243-3602; reviews@macweek.com. Include your name, address and phone number. We reserve the right to edit for clarity and length.


Accelerated for Power Macintosh
WHAT TO DO WHEN
KORINNA CLASHES WITH
TIFFANY, BODONI
DISAGREES WITH GOUDY,
AND GILL AND
BASKERVILLE JUST CAN'T
GET ALONG.
SYMANTEC. Suitcase
Introducing the easiest way to keep your fonts from feuding– the new Suitcase™ 3.0. It lets you organize your fonts the way you like and it automatically monitors and resolves font conflicts before they even develop. Suitcase links font families with specific applications, opening fonts when you need them. It supports all popular font formats like QuickDraw GX, and it's PowerMac native. Just call 1-800-695-0679 ext. 9CC4 for more information, or visit www.symantec.com. Now focus on creativity, not on managing your fonts.
SYMANTEC.
Symantec is a registered trademark and Suitcase is a trademark of Symantec Corporation. Macintosh is a registered trademark of Apple Computer, Inc. ©1996 Symantec Corporation. All rights reserved.

QuickBooks Pro 4.0 adds muscle to its accounting

By Maria Langer

Pro version of Intuit app has features for businesses that track time and create bids.

QuickBooks Pro 4, Intuit Inc.'s accounting software package for small-to-medium-sized businesses, includes a number of new and improved features that should satisfy the needs of most accountants without breaking the company budget. Version 4 offers new payroll and tax reporting features and some basic contact-management functions, as well as an improved Find command and more customization options.

Intuit also offers a standard version of QuickBooks 4 for $119.95. What stands the Pro version apart (besides its higher price, $189.95) are additional features for time-tracking, estimating and job-costing functions.

Do the QuickStep

QuickBooks Pro 4 offers a complete range of accounting functions: accounts receivable, accounts payable, inventory management, payroll and reporting. An easy-to-use interface with forms, customizable reports, automatic entry features and on-line help should please all Macintosh users, regardless of experience.

The new QuickStep Interview feature takes all the guesswork out of setting up an accounting system. By answering a series of questions, the program helps you set up a chart of accounts and customizes QuickBooks for the transactions you'll perform. There are 20 business types, including construction, non-profit organization, manufacturing, and even one for farming/ranching.

If you've been using Intuit's Quicken 6 for Macintosh or earlier (see 03.11.96, Page 30) or QuickBooks 3 for Macintosh (see 03.06.95, Page 37), you can simply open your existing data document in QuickBooks Pro. The application backs up the file, converts it to the new format and displays an abbreviated interview to complete the setup within minutes.

On the clock

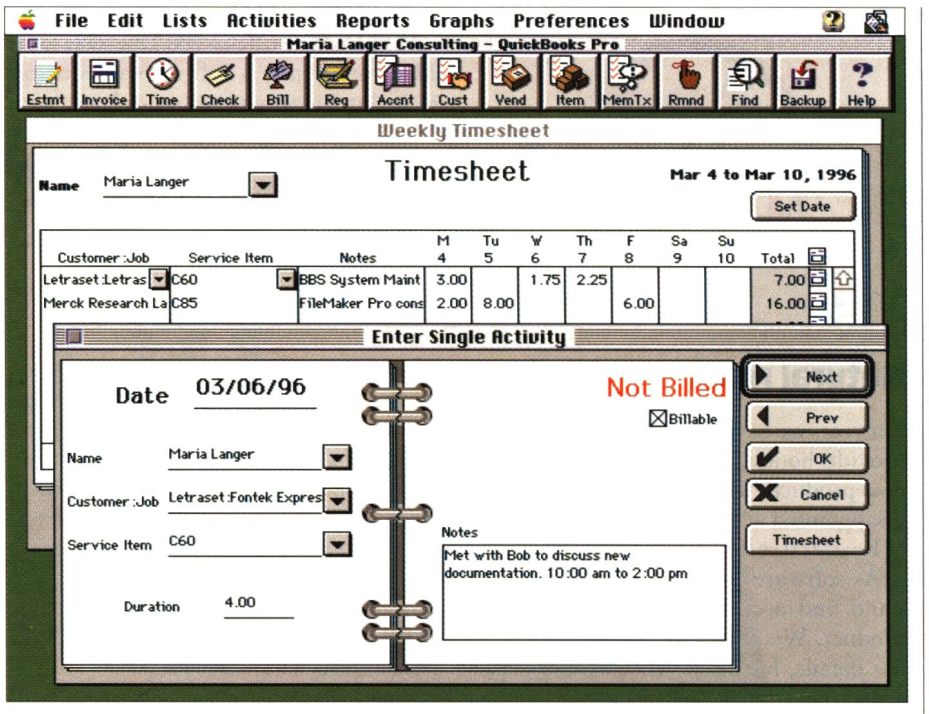
The special features of the Pro version really shine for organizations that bill based on time, create bids or estimates, or track job costs. You can track time spent on projects with a single activity form or weekly time sheet, and QuickBooks Pro can automatically add time-based items to invoices.

You can also create detailed estimates for projects and have QuickBooks calculate estimated amounts based on costs and markup percentages. When the project is awarded, you can turn the bid into an invoice with the click of a button, or have QuickBooks memorize an estimate and recall it for use on a similar project. New Project reports let you track job profitability and costs compared with budgets. All these features seem well-designed and integrate smoothly with the QuickBooks Pro interface.

Several new features for payroll and tax reporting have been added to QuickBooks 4. You can calculate payroll liabilities and prepare checks automatically. New reports include check and deposit detail reports; tax reports with line items ready for transfer to a tax return; and 1099, W-2, W-3, 940 and 941 tax forms. These features can make tax time a lot easier for accountants.

The QuickMath calculator lets you perform mathematical calculations inside a numeric field. You can create custom fields for just about any list item, including customers, vendors, items you sell or services you provide. A Group feature lets you bundle items or services and have QuickBooks track all quantities sold.

Intuit also added some basic contact-management features. You can add time-stamped notes to any customer, vendor, employee or other name record and create to-do list items that appear in the Reminder list. Since the Reminder feature is part of the application, however, it works only when QuickBooks is running.


File Edit Lists Activities Reports Graphs Preferences Window
Maria Langer Consulting - QuickBooks Pro
Estmt Invoice Time Check Bill Reg Acont Cust Vend Item MemTx Rmnd Find Backup Help
Weekly Timesheet
Name Maria Langer
Timesheet
Mar 4 to Mar 10, 1996
Set Date
Customer :Job Service Item Notes M 4 Tu 5 W 6 Th 7 F 8 Sa 9 Su 10 Total
Letraset :Letras C60 BBS System Maint 3.00 1.75 2.25 7.00
Merck Research La C85 FileMaker Pro cons 2.00 8.00 6.00 16.00
Enter Single Activity
Date 03/06/96
Not Billed
Billable
Name Maria Langer
Customer :Job Letraset :Fontek Expres
Service Item C60
Duration 4.00
Notes
Met with Bob to discuss new documentation. 10:00 am to 2:00 pm
Next
Prev
OK
Cancel
Timesheet

Intuit's QuickBooks Pro 4 offers two ways to keep track of time: with a Weekly Timesheet or a Single Activity form. Once information is entered, it can be added to an invoice.

What a find

The Find feature has been completely revamped so you can search for a transaction by item number, date, type, amount or other options — a great improvement over the kludgy and limited Find feature of QuickBooks 3.

Forms include more customization options; you can now change the widths of columns and the order in which information appears. You can now bill your customers with invoices or with statements. There are also more printing options and support for more mailing labels.

You can fine-tune QuickBooks for specific business applications by customizing the Lists and Activities menus, and the Iconbar. For instance, you can move seldom-used menu commands to an Other submenu, or add or remove Iconbar icons for menu commands.

Performance has also improved. Intuit claims that PowerPC-native code makes QuickBooks 4 up to three times faster than Version 3 when run on a Power Mac. We checked this claim by generating two identical reports: A report that took 12 seconds to produce with QuickBooks 3 took only 5 seconds with QuickBooks Pro 4.

Room for improvement

QuickBooks' new mail-merge feature is nothing more than an export feature that creates a tab-delimited text file of all fields for all names in a list or the names you specify. (This is an improvement over the export feature, which simply exports all fields in a list.) To perform a mail merge, the file must be used with a database or word processing application. Unfortunately, since QuickBooks Pro's entry forms do not provide specific fields for address components (such as city, state and ZIP code), exported data is not consistently formatted.

QuickBooks is still not available as a multi-user application. Its data file can be accessed over a network, but only one user may do so at a time. This makes it inconvenient for organizations with decentralized accounting functions. The program's password-protection capabilities, which offer little customization based on job function, do little to aid organizations interested in separation of accounting duties.

When we reviewed Big Software Inc.'s Big Business 1.0 — a networkable program for small businesses that combines sales, inventory, finance and marketing tools — we found it feature-rich save for one glaring omission: payroll (see 01.22.96, Page 67). QuickBooks Pro can account for payroll and related taxes, and Intuit has added some of the contact-management and sales-related features that previously set Big Business apart from its competition. For businesses with centralized accounting functions, QuickBooks' full-featured accounting makes it the best bet. Big Business' networking, communications and advanced security features are better suited to networked organizations with decentralized accounting functions.

Conclusions

With QuickBooks Pro 4, Intuit continues to offer an affordable, easy-to-use accounting solution. Version 4's new features and improvements make it even more powerful and flexible — if you're using QuickBooks already it's definitely worth the upgrade. The additional time and job-cost features in QuickBooks Pro should make consultants and organizations that issue estimates, track job costs and bill based on time very happy. QuickBooks Pro may well be the best accounting solution for small-to-medium-sized businesses that don't require network capabilities.

Intuit Inc. of Mountain View, Calif., is at (415) 944-6000 or (800) 624-8742; fax (520) 295-3014; http://www.intuit.com. □

score card

QuickBooks Pro 4.0

Intuit Inc.
List price: $189.95*
Overall value ◆◆◆◆

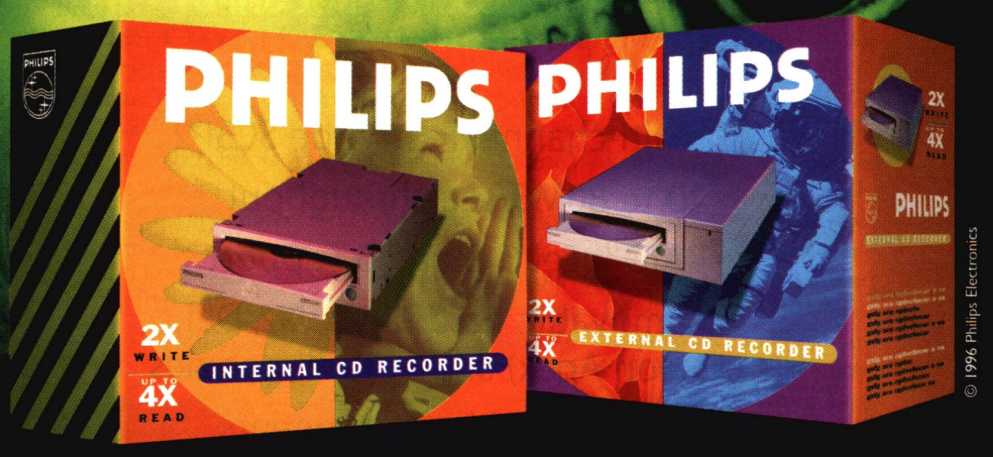
With accounts receivable and payable, inventory-management and payroll functions, QuickBooks Pro 4 offers a complete double-entry accounting solution for small-to-medium-sized businesses. This upgrade expands on and improves the features of the previous version, while adding time-tracking, estimating and job-costing features that benefit specific types of businesses. With customizable forms and reports, the application is easy to use and includes thorough documentation and on-line help. Although a multi-user version is not available for networked environments, QuickBooks Pro's features and affordable price make it a valuable asset for its intended audience.

Performance ◆◆◆◆
Features ◆◆◆◆
Ease of use ◆◆◆◆◆
Documentation/support ◆◆◆◆◆

**Upgrades from QuickBooks 3 or any version of Quicken, $139.95.*

3 visionaries have converged to create a remarkable solution for CD recording.

Introducing an unparalled CD-R system from Philips®, Corel® & Adaptec®.



The Philips CDD2000 Series

- A complete and affordable CD recorder system for your PC
- Create audio and video CDs simply and quickly
- Double-speed recording and up to quadruple-speed reading

Each bundle comes complete

- Philips CD-R drive
- Corel CD Creator®
- ADAPTEC SCSI card*/cable *(Windows packages only.)*
- 2 blank CD-R discs
- 1 boot floppy & Installation manual

For more information: 1.800.235.7373 or www.pps.philips.com

COREL PHILIPS adaptec

Optical Laser	Law Cypress	Bell Micro Products	Consan	D&H	EMJ Data Systems Ltd.
1.800.523.2138	1.800.344.3044	1.408.451.9400	1.800.229.3475	1.800.340.1001	1.519.837.2444

Our RAID disk arrays are taking the video industry by storm.

Not to mention earthquakes, brush fires and an occasional flash flood or two.

All because more and more of today's professional broadcasts are running direct-from-disk via the Enterprise™ and MX/500™ RAID disk arrays from MegaDrive.

In fact, MegaDrive has more multi-terabyte installations in broadcast-class environments under its belt than any other company.

The Enterprise and MX/500 bring online-quality data storage to broadcast, video post-production, special effects and corporate video environments.

We're talking 20 to 80MB-per-second throughput. Uncompressed video capture.

Multiple simultaneous video streams. Terabytes of capacity for hours of broadcast video. Failure-free video data storage via RAID 3 and hot-swappable components. And a knowlegeable technical support team with years of exper-ience in digital video, prepress, network and Internet server storage.

And, as with all MegaDrive storage solutions, you get an easy, cost-effective upgrade path that includes double-capacity and new media drives and next-generation serial interfaces.*

Call MegaDrive today to find out why we're leading the way in digital video storage.

The MX/500's Master/Slave architecture lets you stripe terabytes of data across multiple busses, bringing uncompressed video capture rates to broadcast and post-production environments.

20–80MB/SECOND THROUGHPUT
UP TO 10 TERABYTES ONLINE

- Multi-channel Fast/Wide SCSI-2
- 20 to 80MB/sec. throughput
- RAID level 0, 3 and 5 support
- Removable hard drive, Jaz, DLT, (soon Apex) and optical modules
- Hot-swappable components
- Cableless, backplane design
- PCI and NuBus configurations

Mac OS

Presenting the Enterprise and MX/500 RAID disk arrays from MegaDrive.

Online data storage for broadcast, post-production and desktop video.

For an authorized dealer near you, call **1-800-664-MEGA**

**Serial fiber-channel interface available Q4 '96; 9GB 3.5" drive module (Enterprise) available Q2 '96; 23GB 5.25" drive module (Enterprise, MX/500) available Q4 '96. MegaDrive Systems, Inc., 489 South Robertson Boulevard, Beverly Hills, California 90211, (310)247-0006, (310)247-8118 fax, sales@megadrive.com. Enterprise and MX/500 are registered trademarks of MegaDrive. ©MegaDrive Systems, Inc. Specifications subject to change. Mac and the Mac OS logo are registered trademarks of Apple Computer, Inc., used under license. All other brand and product names are registered trademarks of their respective owners.*

MEGADRIVE™
Accelerating Digital Media
http://www.megadrive.com

OPI SERVERS

Users reduce resource drain, increase work flow with OPI

By Larry Stevens

Bill Covington, technology manager at Laser Tech Color Inc., a Dallas-based pre-press house, wasn't particularly surprised — and certainly wasn't dismayed — about the increased amount of four-color work his company was getting. After all, Laser Tech Color recently invested in a four-processor SGI Challenge server to handle those gigantic full-color files. The new Silicon Graphics Inc. machine allowed the company to expand its catalog work and provide faster service to its clients.

But while the SGI server was up to the job, the 32 Macs running on Laser Tech's Ethernet Fiber Distributed Data Interface network were creating bottlenecks. To generate a 230-Mbyte PostScript file and send it to the RIP took 52 minutes. "Tying up machines for that period of time was a severe drain on our resources," Covington said.

But that was before he found a solution: FullPress, an Open Prepress Interface (OPI) server from Xinet Inc. of Berkeley, Calif., that automatically sends low-resolution files to the Macs and swaps the high-resolution versions when the files are sent to the RIP. As a result, sending a 230-Mbyte Adobe PageMaker file from a Mac to the RIP at Covington's company now takes only three minutes.

OPI servers increase throughput by automatically creating low-resolution FPO (for position only) copies of high-resolution scans. Generally, both the high- and low-resolution versions remain on the OPI server. And the low-res version is tagged and linked to its high-res counterpart. When the Mac or Intel-standard client calls for a scan, the server sends it the FPO copy, if available. When the file that contains the low-res image is sent back to the OPI server, it automatically replaces the FPO image with the linked high-res version and sends the file to the PostScript imagesetter.

"Look for a system that supports many different formats, since you can never be sure of what you'll want to use in the future."

—Bill Covington, Laser Tech Color Inc.

Besides providing a performance boost, OPI also improves work flow. The photo retouching can be performed on the high-res version while the page-layout operator uses the low-resolution copy.

Prior to buying the SGI server and FullPress, Laser Tech was using a combination of proprietary systems, most recently EtherShare from Helios Software GmbH of Hanover, Germany. Helios introduced EtherShare OPI, but Covington decided not to purchase it.

"It seemed very cumbersome," he said. For example, he said it would require him to store all high-resolution images on each of his five RIP servers instead of maintaining them in one central location as he does with FullPress.

Covington said he particularly likes how transparent FullPress is. Mac users access the images the same way they would on a non-OPI server. If the low-resolution image exists, and if that Mac is assigned to receive low-resolution images, that copy is automatically sent to the Mac. "Most of our people didn't have to change the way they work at all," Covington said.

JOHN FARNSWORTH

Transparent alliance

Ease-of-use and transparency are what led David DeMilo, director of publishing technology at Newbridge Co. Inc., to select FullPress. His company, based in New York, manages a number of book clubs, including the Mac Professionals Book Club. Two years ago, Newbridge built an internal pre-press operation around an SGI server.

DeMilo found his company taking on more and more full-color work. The time it took to generate PostScript files and transfer them to the RIP was becoming excessive.

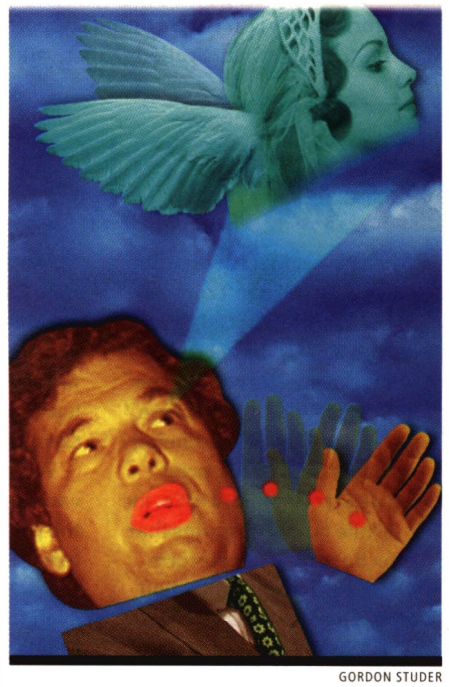
Before purchasing FullPress, DeMilo was using the picture-replacement feature (similar to OPI) of Rip 'n' Strip from The Contex Prepress, a division of Xyvision Inc. of Wakefield, Mass. But, according to DeMilo, the product is limited. "It only works when you're using the Contex work-flow [system]." The system includes not only picture replacement but also RIPs and traps. DeMilo switched to FullPress in search of independence and flexibility.

"Because FullPress only does one thing — picture swapping — it's easier to use and gives us the ability to choose different tools for other areas of our operation," he said.

In OPI, DeMilo is seeking the flexibility that comes from open systems. After all, that was OPI's primary function. Picture-replacement strategies are not new; they've been available on proprietary high-end color electronic pre-press systems for years. OPI systems, however, vary in the number of file formats they support. Originally, OPI systems supported only TIFF files. By now, virtually all support four-color EPS files.

Sometimes that's not enough. When Laser Tech's Covington was creating images for a jewelry catalog, he found that to get the

See Solutions, next page



GORDON STUDER

MACINTOUCH

RIC FORD

Play it straight or say goodbye to user good will

It would be far easier for us to make good decisions about products if we had access to the failure statistics and bug lists that companies keep confidential. Instead, we base our decisions on shared anecdotal evidence and the sparse information that passes through vendors' public-relations censors. The cost of rediscovering, isolating, cataloging and working around bugs and usability problems, not the purchase price, is the primary cost of using our computers.

Apple, with the Macintosh, is perfectly positioned to use this issue to its advantage. The Mac is inherently friendly, consistent and well-integrated. Apple quality has traditionally been high, and support is above average, if not all it should be. Apple's public Internet servers offer far more effective help, in my opinion, than those of companies such as Microsoft Corp. and Symantec Corp. (although Symantec is working on updating its servers).

Unfortunately, Apple quality has slipped in both hardware and software, and the company has not been completely candid about the problems or fixes. This hurts customers and good will, which has real value. And it makes selling Apple's cost-of-ownership advantages

See MacInTouch, next page

SOLUTIONS

From previous page

photos of his clients' gold and silver jewelry to sparkle just right, he needed the tools available on a Crosfield system from DuPont Printing & Publishing of Wilmington, Del.

Unfortunately, FullPress didn't support Crosfield images. He called Xinet, and within a week it provided the Crosfield support. Covington said he was impressed with Xinet's service in this area. But he realizes when purchasing OPI you can't always count on the vendor providing support for file formats as you need them.

Compatibility counts

Troy Tolkinen, systems integrator at Banta Digital Group Color Response of Chanhassen, Minn., agreed that when shopping for an OPI system, it's best to seek one that supports the largest number of file formats. But he added that it should support at least your current library of files.

His company was coming off a proprietary system from Scitex America Corp. of Bedford, Mass., and has a large number of files created by Scitex's Automatic Picture Replacement (APR) technology. "It was very important for us not to have to create a new set of proxy files for our entire library," Tolkinen said.

So when he was shopping for an OPI system last year, he considered Helios Software's EtherShare OPI and Canopi from Information Presentation Technologies Inc. of San Luis Obispo, Calif. He chose the latter product because it was the only one of the two that could read APR files.

Peter Truskier, technology manager at Star Graphic Arts Co. Inc. in Brisbane, Calif., is also moving from a proprietary Scitex system to a desktop one, although his is based on a Sun, not a Scitex, server. He too has a number of APR files and considered only OPI systems that support that format. He chose InterSep from Archetype Inc. of Waltham, Mass., because of its APR support and for three other reasons.

First, it can handle nested image callouts. For example, Truskier can place an OPI low-resolution image in an Adobe Illustrator file, which is then placed in a PageMaker document. Second, when confronted with a CMYK EPS file that it recognizes, such as one created by Adobe Photoshop, InterSep will send only one color to the RIP at a time. Other OPI systems Truskier looked at send four colors to the RIP four times, using up bandwidth.

"With 95 percent of our scans saved in Photoshop format, it means most of the time we're saving 75 percent of bandwidth," he said.

Finally, in the near future, Truskier is planning to install InterSep MediaBank, Archetype's image library system.

Using a 200-Mbyte file when all you need is an FPO version is, for many managers, an unacceptable waste of Mac resources and network bandwidth. For that reason, if you're moving to an open systems desktop publishing operation and you're working with large, full-color scans, OPI in some form is practically a necessity. □

Mac-based OPI: Less expensive, less powerful

While Power Macs are getting close, they still don't compare to Unix servers for OPI. "We looked at [Mac-based OPI], but not seriously. We needed the power of a big Unix machine," said Peter Truskier, technology manager at color pre-press house Star Graphic Arts Co. Inc.

While no one disputes that Unix boxes can outperform Apple's offerings, some find Mac-based systems satisfactory. David Wolz, manager of electronic pre-press at American Color Systems Inc., a color pre-press house in New Berlin, Wis., uses Color Central from Luminous Corp. of Seattle. "[It's] an inexpensive way to get started with OPI," he said.

Looks familiar

Color Central, which runs on either a Mac or Windows NT server, runs about $4,000 for the Mac version. That's about $2,000 less than InterSep, Archetype Inc.'s Unix-based OPI. And the Apple Workgroup Server 9150, on which Wolz runs Color Central, is less expensive than most Unix-based servers. The familiar Mac interface also helped to ease the learning process for American Color Systems' employees.

Wolz said he finds no disadvantage to counterbalance all the pros of his Mac-based system. "The server gives us all the performance we need, even for files that are 150 Mbytes," he said.

Mac-based OPI may be a good choice for those who are working with only small to medium files. For example, the Harrisburg, Pa., division of the Book Publishing Services of R.R. Donnelley & Sons Inc. does primarily one- and two-color work, so file size is not excessive. But that doesn't mean that Dan Everard, the systems engineer for the electronic pre-press book publishing plant, has it easy. "I may not have many 40-Mbyte files," he said. "But often the people here have to work with 40 [separate] 5-Mbyte files in a very short period of time."

Improved accuracy

The company creates 75,000 pages a month and usually has 200 titles in the works. Color Central, Everard said, not only improves performance but accuracy as well. In the past, customers would provide the pages with a place holder for images. Everard's division would then try to place the image in the page layout using the place holder as a guide. "Sometimes we'd get it right; sometimes we wouldn't," Everard said.

Now Everard scans the image, has Color Central create the low-resolution version and distributes that to the customer. The customer uses the low-resolution copy in the page layout instead of the place holder. When the file gets back to Donnelley, Color Central automatically replaces the low-resolution file.

While Everard is generally satisfied with the Mac's performance, there is always room for improvement. So he has moved from a Quadra 950 to a Power Mac 7500. His next step is to the Windows NT version of Color Central. "The interface is virtually the same as the Mac version, and the power [of the hardware] will help us move things along quickly," he said.

Printdesk is a Mac-based OPI system from Cops, A Colorocs Information Technologies Co., based in Norcross, Ga. Steve Zenger, president of ImageCore Ltd., a color pre-press and digital photography company in Buffalo, N.Y., is an early Printdesk user.

He considered Unix-based OPI, but when his staff heard about it, they almost mutinied. "Our people were comfortable with the Mac," he said. They didn't want to have to learn to work with a Unix system. — By Larry Stevens

MACINTOUCH

From previous page

against competitors much harder.

A current example of the problem is the Mac 6300 series. I have no statistics on failure rates or engineering fixes, and I have seen no notices from Apple of recalls, but I have a pile of e-mail about these systems freezing or crashing during start-up and operation. (Sound glitches are also a symptom of the problems.)

Going in circles

Replacing the motherboard seems to be the solution. Some customers report Apple acknowledgment of a serious problem; others report that Apple denies it, insisting that the customer jump through irrelevant hoops, such as re-installing system software, disabling extensions and changing cache settings. Apple can count on losing future sales when customers waste their hours on runarounds after spending thousands of dollars on Apple's latest and greatest Power Mac.

More e-mail describes frequent crashes with PCI Macs, but I have more confidence that the PCI Macs can be reliable, given Mac OS updates and delicate management of RAM and cache DIMMs (dual in-line memory modules), storage devices, and peripheral drivers. I am not as familiar with the PowerPC 603- and 603e-based systems.

From customer reports, they strike me as trickier than other Macs, involving some special software incompatibilities on top of their hardware problems. Some of these may derive from compiler issues and the 603 chips; others may simply be lack of vendor experience with these models. (I would not recommend one to a client at the moment.) As one example, Open Transport 1.1 is not working on 5200-, 5300-, 6200- and 6300-series Macs. System 7.5.3's Network Software Selector utility provides a work-around.

With the quirks and changes in the Macintosh line, the problem of managing the unique code of Microsoft Office has gotten harder, too. At least Microsoft is good about acknowledging bugs.

The initial Office 4.2 release, with Word 6.0, was a documented disaster, but subsequent releases and patches addressed the most critical of those problems, and Microsoft had the integrity to offer customers their money back.

At least Microsoft is good about acknowledging its bugs.

Bye MOM

One simple option can help: Eliminate the Microsoft Office Manager (MOM) utility. MOM is involved in the infamous "application unknown could not be quit" error message as well as Type 11 crashes with System 7.5.2. If you really require the utility, be sure to get Microsoft Office 4.2.1b or at least the Office Manager Patch for 7.5.2 (ftp://ftp.microsoft.com/softlib/mslfiles/mompatch.hqx). System 7.5.3 also fixes the bug, and the patch should be removed after migrating to this Mac OS release.

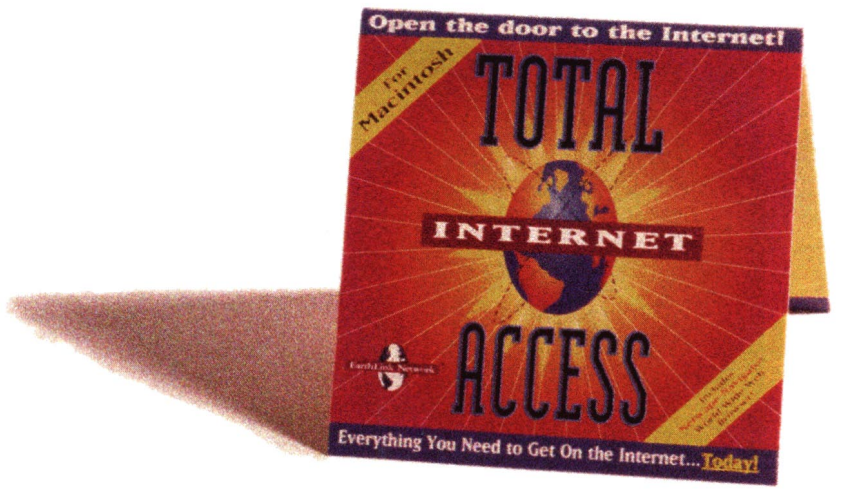
Another patch, Office 4.2x Update for Power Mac 1.0.1 (ftp://ftp.microsoft.com/softlib/mslfiles/mc1164.hqx), fixed some crashes related to QuickDraw GX. This second version of the patch addressed incompatibilities with Global Village fax software in the first version. Anecdotal evidence suggests trying configurations both with and without the patch if you encounter problems.

Another System 7.5.3 fix eliminates excruciating slowdowns starting Microsoft Office applications on PCI Power Macs with virtual memory enabled.

Finally, readers noted that Microsoft's utility for Word macro viruses (see 01.22.96, Page 71) is not a complete solution; it flags only viral macros in certain cases and does not eliminate all these viruses automatically. □

Comments on MacInTouch are welcome at (508) 897-2621. Please address e-mail to 72511,44 on CompuServe or ricford@macintouch.com on the Internet. The MacInTouch home page is at http://www.macintouch.com/~ricford/.

Internet for Macintosh.
Install disks. Double click.



It's that simple.

EarthLink Network™

The coolest, easiest Internet access on Earth.

$19.95 per month. Flat rate. Unlimited usage.
Plus, every account includes a free 2 meg Web site.
Call now for your free TotalAccess™
software with Netscape Navigator.™

1-800-395-8425

NETSCAPE NAVIGATOR® INCLUDED

Internet access in over 210 cities in the U.S. and Canada. Software for MACINTOSH, WINDOWS WINDOWS 95, featuring Netscape Navigator.™ EarthLink Network is one of the largest Web, space providers in the U.S. and also provides ISDN, Frame Relay, T1 and other Internet services.

EarthLink Network, Inc. 3100 New York Drive, Pasadena, California 91107 Fax: (818) 296-2470.
Info via email: info@earthlink.net. Live human via email: sales@earthlink.net. Visit our Web site at http://www.earthlink.net

Copyright ©1996 EarthLink Network, Inc. All Rights Reserved. Trademarks are property of their respective owners.Netscape Communications, Netscape Navigator and the Netscape Communications logo are trademarks of Netscape Communications Corporation.

The ultimate computing resource online

ZDNet™

http://www.zdnet.com

From the sources you trust:

- PC Magazine
- PC Week
- PC Computing
- Computer Shopper
- Windows Sources
- MacUser
- MacWEEK
- Inter@ctive Week
- Computer Life
- FamilyPC
- Computer Gaming World
- Yahoo! Internet Life

Be sure to sign up for Personal View
ZD Net's FREE news service that you can easily configure to track only the companies and products that interest you most.

Click into ZD Net's world-renowned Shareware Library and start down-loading!
Over 10,000 programs — all tested, rated and reviewed by ZD Net editors.

Join in! There's a lot going on —
from wide-ranging discussions with industry leaders, to topical weekly chats with editors and ZD Net personalities — there's always some-thing new, exciting and insightful happening at www.zdnet.com.

See You Online!

800-572-4305

Web Watch
www.directdc.com

We are the High-end storage configuration Experts. Call us for your solutions on RAID Sytems, Video, Networks, and Jukebox applications. All Platforms.

"Direct Connections provided excellent technical support." **MacWorld July'95**
"Direct Connections' array offered the best performance per dollar of the drives tested." **Digital Video Oct. '94**
"Your next option is to locate...highly visible digital video suppliers like Direct Connections." **NEWMEDIA June '95**
"This array is the one to beat." **Ken Grey** Writer for WIRED, Computer User, MovieMaker, Computer Video, and Digital Video Magazine.
"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." **MacWorld April '95**

HOURS: M-F 8:00-8PM SAT 10-2 CST Int'L: 612-937-9771 FAX: 612-937-6285

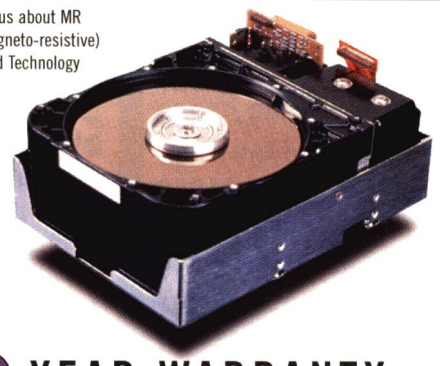
HARD DRIVES

Differentials available

Only from DC

- 30day money back
- Toll free tech support
- In-house engineers
- Factory direct products
- Award winning service
- $5 million in inventory
- 9 Years in business

Ask us about MR (magneto-resistive) Head Technology



5 YEAR WARRANTY

BRAND/MODEL	CAPACITY		ACCESS	RPM	INTERNAL	EXTERNAL
Hitachi 2.5" IDE***	540MB		14MS	5400	$ 245	
Hitachi 2.5" IDE***	810MB		14MS	5400	$ 339	
Hitachi 2.5" IDE***	1.0GIG		14MS	5400	$ 425	
Conner CFP1080s	1.2GIG	LP	11MS	5400	$ 295	$ 365
Seagate ST51080N ***	1.2GIG	LP	12.5MS	5400	$ 290	$ 360
Seagate ST31231N***	1.2GIG	LP	9MS	5400	$ 395	$ 465
Seagate Hawk	2.4GIG	LP	9MS	5400	$ 655	$ 725
Conner CFP2105S	2.1GIG	LP	9MS	5400	$ 585	$ 655
Conner CFP2107S	2.1GIG	LP	8MS	7200	$ 759	$ 829
Quantum Capella	2.2GIG	MR	8.6MS	5400	$ 699	$ 799
Quantum Atlas	2.1GIG	LP	8MS	7200	$ 795	$ 865
Seagate Barracuda 2	2.5GIG	LP	8MS	7200	$ 815	$ 885
Seagate Barracuda 2W	2.5GIG	LP	8MS	7200	$ 939	$ 999
Conner CFP2107W	2.5GIG	LP	8MS	7200	$ 795	$ 895
Fujitsu M2934S	4.2GIG	MR	8MS	7200	$ 1125	$ 1195
Fujitsu M2934W	4.2GIG	MR	8MS	7200	$ 1175	$ 1275
Seagate Barracuda 4	4.1GIG		8MS	7200	$ 1195	$ 1265
Seagate Barracuda 4W	4.1GIG		8MS	7200	$ 1255	$ 1325
Seagate ST15230N	4.3GIG		9MS	5400	$ 899	$ 999
Conner CFP4207S	4.2GIG		9MS	7200	$ 1045	$ 1115
Conner CFP4207wide	4.2GIG		9MS	7200	$ 1099	$ 1199
Quantum Atlas	4.3GIG		8.6MS	7200	$ 1099	$ 1169
Seagate Elite 9	9.0GIG		11MS	5400	$ 2095	$ 2195
Seagate Elite 9W	9.0GIG		11MS	5400	$ 2295	$ 2395

CD RECORDERS/PLAYERS

Ricoh 2 speed recorder / 2 speed player

$949

4 speed Recorder
4 speed Player
4 GIG Hard drive
10 Blank CD's
1 Toast Software
$2995

Includes Free software and 10 CD's

Yamaha 4 speed Recorder / 4 Player	External	$ 1749
Yamaha 2 speed Recorder / 4 speed Player	External	$ 1145
Yamaha 2x4 Recorder with built in hard drive	External	$ 1529
Pioneer 4 speed 6-Disc CD-ROM Changer	External	$ 325
Toshiba 3701 6 speed CD Player	External	$ 445
Pioneer 4 speed CD Player	External	$ 265
Panasonic PD 4 speed/650mb Optical	External	$ 635

Many CD Tower Configurations available. Upto 500 Disks!

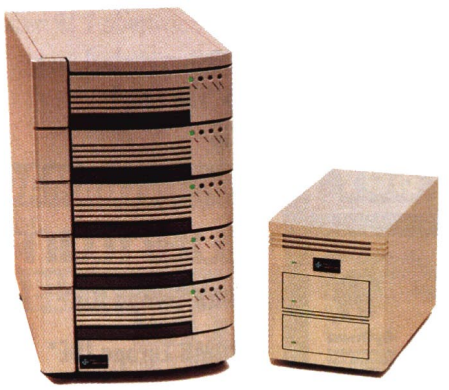
MEDIA

128MB	Optical	$ 15	10 Blank CD's	$ 69
230MB	Optical	$ 25	90M 4MM Tape	$ 8
1.3GIG	Optical	$ 69	160M 8MM Tape	$ 18

"Stick with a vendor such as Direct Connections that understands how to prepare a RAID for desktop video." MacWorld April '95

RAID SYSTEMS

FAST DESKTOP OR SERVER



- **28mb/sec sustained sequential Writes.**
  Tested with MacBench on PowerMac 9500.
  12GIG with 2 PCI accelerator cards $ 7799

From Hardware RAIDS to Software RAIDS, we'll show you how to configure the best system to meet your needs.

External, Remus software, and cabling

• 4 GIG Fast and Wide Raid	$ 2199
• 8 GIG Fast and Wide Raid	$ 2799
• 16 GIG Fast and Wide RAID	$ 6130
• 28 GIG Fast and Wide RAID	$ 9499
• 40 GIG Fast and Wide RAID	$ 15599

Atto Silicon Express IV	$ 835
Atto Express PCI MC	$ 765
Atto Express PCI SC	$ 345
Adaptec AHA-2940W	$ 245
SCSI Expander	$1345

MEDIA 100 TARGA 2000 radius

OPTICAL DRIVES

$1959

2.6GIG Sony Optical for $1959 external including all cabling, and software!!

CAPACITY	MODEL	EXTERNAL
230MB	Fujitsu	$ 499
1.3GB	NEC	$ 1295
1.3GB	Sony 4MB cache	$ 1695
2.6GB	Hitachi	$ 1895
2.6GB	Sony	$ 1959
26GB	Sony Jukebox	$ 4695

1 YEAR WARRANTY

TAPE BACK-UP

We are the tape-backup Experts

2 YEAR WARRANTY

$3299

30GIG

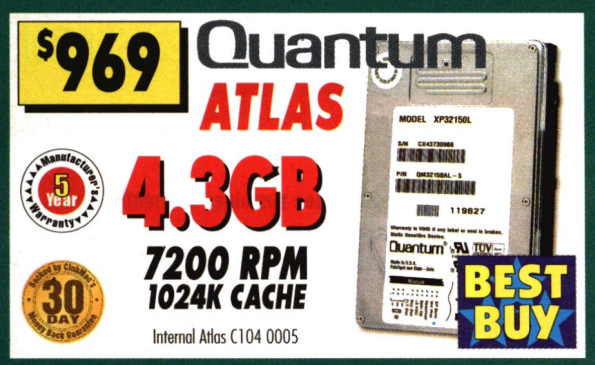
With 2.5MB/sec sustained transfer, the DLT2000XT is perfect for digital video or pre-press with large data files.

All systems include one tape cartridge, cabling, and Retrospect software.

CAPACITY	MODEL	MEDIA	INTERNAL	EXTERNAL
-4GIG	Tandberg Panther	1/4"	$ 469	$ 539
-8GIG	Sony 7000 DDS-2* 1.5MB/sec	4MM	$ 1199	$ 1299
-14GIG	Exabyte 8505XL	8MM	$ 2065	$ 2125
-10GIG	Exabyte 8505S	8MM	$ 1475	$ 1575
-30GIG	DLT2000XT	1/2"		$ 3299
-40GIG	DLT4000	1/2"		$ 5499
-140GIG	Exabyte-10h Library	8MM		$ 4999
-200GIG	Spectra Logic 4000	4MM		$ 8599
-280GIG	Breece Hill Library	1/2"		$ 27999

DIRECT CONNECTIONS 7668 Executive Drive Eden Prairie, MN 55344 Gov't, Corp, and Univ. P.O's accepted. *1YR Warranty 30 day money back does not apply towards media and software.

1-800-CLUBMAC 1-800-258-2622



Source Code 65126

ClubMac

1-800-258-2622

CLUBMAC HARD DRIVES

Quantum

		Internal/External	Internal/External
850MB TrailBlazer		C104 0002/C104 0052	$199/$259
1080MB Fireball		C104 0000/C104 0050	$259/$319
1280MB Fireball		C104 0001/C104 0051	$299/$359
2200MB Capella		C104 0003/C104 0053	$629/$689
2150MB Atlas		C104 0004/C104 0054	$739/$799
4300MB Atlas	BEST BUY	C104 0005/C104 0055	$969/$1029

Seagate

1.0GB Medalist 51080N		C104 0302/C104 0352	$269/$329
4.3GB Hawk 4 15230N		C104 0304/C104 0354	$999/$1059
2.5GB Barracuda 2 LP 32550N		C104 0300/C104 0350	$769/$829
4.3GB Barracuda 4 15150N		C104 0301/C104 0351	$1199/$1259
5.25" Full Height			
9.1GB Elite-9 410800N		C104 0305/C104 0355	$2199/$2299

CLUBMAC 2.5" DRIVES

Quantum

	Internal	Internal
810MB Europa IDE*	C104 0007	$329 Internal
1080MB Europa IDE*	C104 0008	$419 Internal

*Compatible with PowerBook 150 and 5300 series only.

CLUBMAC FAST AND WIDE DRIVES

Seagate

	Internal/External	Internal/External
2.1GB Barracuda 2LP ST32150W	C104 0400/C104 0450	$959/$1059
4.3GB Barracuda 4 ST15150W	C104 0401/C104 0451	$1319/$1419
9.1GB Elite 9 ST410800W	C104 0401/C104 0452	$2379/$2499

Quantum

2.2GB Capella VP32210SW	C104 0100/C104 0150	$699/$799
4.3GB Grand Prix XP34301SW	C104 0101/C104 0151	$1029/$1129

Fast and Wide Controllers

adaptec

A024 1006	PowerDomain AHA 2940W SCSI Accelerator	$299
A029 1001	Adaptec Remus 1.3 (Raid Levels 1, 4, 5) (Software)	$439

FWB incorporated

F094 1033	SCSI JackHammer PCI	$389
F094 1002	SCSI JackHammer NuBus	$459

QLogic

Q010 1008	Fast!SCSI MAC PCI-N for Fast SCSI-2 (10 MB/sec) connectivity	$229
Q010 1009	Fast!SCSI MAC PCI-W for Fast/Wide SCSI (20 MB/sec) connectivity	$295
Q010 1010	Fast!SCSI MAC PCI-D for Fast/Wide SCSI where longer I/O cables required	$449

CD-ROM READERS

NEC

		Access time	Trans Rate	
N024 1062	MultiSpin 6Xe CD-ROM Reader	150ms	900k/sec.	$479
N024 1070	MultiSpin 4Xc 7 Disc Changer	350ms	600k/sec.	$339
N024 1011	MultiSpin 3Xp plus Portable CD-ROM	240ms	500k/sec.	$349

ClubMac

		Access time	Trans Rate	
C104 1600	ClubMac Six-Speed CD-ROM Drive	140ms	900k/sec.	$299
C104 1500	ClubMac Quad-Speed CD-ROM Drive	140ms	600k/sec.	$179
C104 1400	ClubMac Classic 2X CD-ROM Drive	250ms	300k/sec.	$99

Call Toll Free 1-800-258-2622

for a FREE Subscription to the ClubMac Catalog!

REMOVABLE DRIVES

ClubMac

SyQuest

C104 1801	ClubMac 200MB 5.25" Removable*	$349
C104 1800	ClubMac 88MB 5.25" Removable* BEST BUY	$199
C104 1802	ClubMac 270MB 3.5" Removable*	$349
C104 1803	ClubMac 105MB 3.5" Removable*	$149
S198 2001	SyQuest EZ135 135MB 3.5" Removable	$219

*Cartridge not included

SyQuest Media

BEST BUY

Part Number	Media	Qty 1	Qty 10	Qty 20
S198 1010	44MB	$40ea	$39.50ea	$39ea
S198 1011	88MB	$44ea	$43.50ea	$43ea
S198 1012	200MB	$69ea	$68ea	$67ea
S198 1013	105MB	$35ea	$34.50ea	$34ea
S198 1014	270MB	$57ea	$56ea	$55ea
S198 2010	EZ135MB	$23ea	$22.50ea	$22ea

iomega

I044 1010	Zip Drive with One 100MB Cartridge	$199.99
I040 1006	Zip Cartridge (100MB)	$19.99
I040 1011	Zip Cartridge (3 pack)	$49.95
I040 1010	Zip Cartridge (10 pack)	$149.95

TAPE BACKUP

ClubMac

Shipped with Retrospect 3.0

C104 0900	ClubMac 2-4GB SCSI MiniCartridge Drive (Cartridge not included)	$489
C104 1300	ClubMac 2.0GB ThunderDAT Drive	$749
C104 1301	ClubMac 4-8GB DDS-2 DAT Drive	$899
C104 1200	ClubMac 4-8GB DDS-2 SuperDAT Drive	$1059
C104 0200	ClubMac 40GB DLT Subsystem DLT 4000	$4999
S100 1043	Sony QW3080XLF QIC/WIDE 2-4GB Cartridge	$29
V010 1018	Verbatim 90M 4mm DAT Cartridge 2-4GB	$9
V010 1043	Verbatim 120M 4mm DAT Cartridge 4-8GB	$20
Q034 1022	1/2 inch media for DLT 4000	$99

OPTICAL DRIVES

ClubMac

C104 1900	ClubMac 5.25" Olympus 1.3GB Optical w/1.3GB Cartridge	$1359
C104 1902	ClubMac 3.5" Olympus 230MB Optical w/230MB Cartridge	$459
V010 1021	Verbatim 1.3GB Optical Cartridge 1024KB	$59
V010 1013	Verbatim 230MB Formatted Optical Cartridge	$24

TORAY Optical Storage Solutions

T140 1001	TORAY Phasewriter DUAL™ PD 4XCD/650MB Optical	$649
T140 2001	TORAY PDM-650 Media (ZCAV 650MB)	$59

PINNACLE MICRO THE OPTICAL STORAGE COMPANY

P074 1005	Apex 4.6GB Optical w/One Cartridge	$1589
P074 1006	Apex 4.6GB 1024K Media	$189

CD RECORDABLE DRIVES

MICROBOARDS of AMERICA

M274 1002	PlayWrite 2X 2000 CDR w/Gear Multimedia	$1189
M274 1004	PlayWrite 4X 4000 CDR w/Gear Multimedia	$1899

YAMAHA®

Y010 1002	Yamaha 4X CD Recorder w/Toast CD Mastering software	$1829

PINNACLE MICRO THE OPTICAL STORAGE COMPANY

P074 1008	RCD-5040 2X Recordable CD System 2X Write/4X Read	$1249

Verbatim

V010 1022	74 Min Recordable CD Disks 650MB	$8

7 Hammond, Irvine CA 92718

DISCOVER NOVUS VISA MasterCard AMERICAN EXPRESS Cards

NO SURCHARGE!

- ClubMac hard drives include all cables, cords, leds, and brackets necessary for use with the Macintosh you specify. ClubMac formats all hard drives and installs Apple System 7.1 software, Charismac Anubis Driver, and PowerMerge LE.
- External drives include a Double Shielded, twisted pair 25-50 SCSI cable.
- ClubMac honors all original equipment manufacturers warranties. ClubMac will repair or replace drives at it's discretion. Drives returned within first 30 days of purchase are replaced with a new unit.
- All ClubMac hard drives include a 30 day money back guarantee. Your risk is the cost of shipping.

WARRANTIES: All items manufactured by ClubMac are returned to ClubMac for warranty repair. All other items carry manufacturer's warranty. MONEY BACK GUARANTEE: All products manufactured by ClubMac carry a 30 day money back guarantee. ClubMac extends all other manufacturers' return policies to its customers. Non-ClubMac products carry 30 day money back guarantee when specified. RETURNS: Call for RMA number! Any product that is returned WITHOUT an RMA number will be refused. ALL PRODUCT INFORMATION AND PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE. NOT RESPONSIBLE FOR TYPOGRAPHICAL ERRORS.

ClubMac®

Carries the full line of Apple products.

Authorized Catalog Reseller

24 HOURS A DAY, 7 DAYS A WEEK — OPEN

MONITORS

radius

R016 1031	Radius PressView 17•SR Display System	$1999
R016 1009	Radius Intellicolor Display/20e	$1799
R016 1032	Radius PrecisionView 21Display	$2299
R016 1034	Radius PressView 21•SR Display System	$3199

NEC

N026 1031	NEC 15" MultiSync XV15+	$469
N026 1032	NEC 17" MultiSync XV17+	$799
N026 1009	NEC 17" MultiSync XP17	$1049
N026 1010	NEC 21" MultiSync XE21	$1779
N026 1011	NEC 21" MultiSync XP21	$2159

SONY

S106 1021	Sony Multiscan Trinitron 15SX-1	$445
S106 1017	Sony Multiscan Trinitron 15SF-2	$515
S106 1018	Sony Multiscan Trinitron 17SF-2	$915
S106 1019	Sony Multiscan Trinitron 17SE-2T	$1095
S106 1020	Sony Multiscan Trinitron 20SF-2	$1855

Portrait Display Labs

P026 1003	Portrait/Pivot 1700 .26 Dot Pitch	$1049
P026 1004	Portrait/Pivot 1700 .28 Dot Pitch	$989

MAG INNOVISION

M156 1004	MagInnovision DX15T Technitron w/Trinitron tube	$449
M156 1005	MagInnovision DX17T Technitron w/Trinitron tube	$799

PRINTERS

HEWLETT PACKARD

H047 1030	HP LaserJet 5MP Laser Printer	$1045
H047 1039	HP DeskWriter 600 InkJet Printer	$249
H047 1033	HP DeskWriter 660C Inkjet Printer	$379
H047 1041	HP DeskJet 850C InkJet Printer	$515
H047 1042	HP DeskJet 1600CM/PS PostScript Printer	$1985
H047 1061	HP DeskJet 340CM w/Color kit & Mac adapter	$339

EPSON

E047 1018	Epson Stylus Color II	$449
E047 1019	Epson Stylus Color Pro	$599
E047 1022	Epson Stylus Pro XL	$1799

NEC

N027 1001	NEC SilentWriter Model 640	$399
N027 1006	NEC SuperScript 3000M Color Dye-Sub	$399

SCANNERS

EPSON

E045 1003	Epson ES-1200C Pro-MAC Color Scanner	$1179
E045 1013	Epson ES-1000C MAC Scanner	$735

AGFA

A055 1011	Agfa StudioScan IIsi	$939
A055 1001	Agfa Arcus II	$2195

HEWLETT PACKARD

H045 1013	HP ScanJet 4s Personal Scanner	$299
H045 1009	HP ScanJet 4c Color/GS Scanner	$949

MICROTEK

M150 1006	Microtek Scanmaker III	$1989
M150 1026	Microtek Scanmaker E3	$399

UMAX

U010 1044	Umax PowerLook Pro w/ Transparency Adapter	$1949
U010 1054	Umax Vista-S12 Pro	$899
U010 1038	Umax Vista-S8 Pro	$769
U010 1010	Umax Vista-S6 LE	$559

GRAPHIC CARDS

radius

R013 1059	Radius Thunder IV GX 1600	$1999
R013 1061	Radius Thunder IV GX 1152	$1599
R013 1069	Radius PrecisionColor 8/1600 PCI Card	$469
R013 1070	Radius Thunder 30/1152 PCI Card	$799
R013 1071	Radius Thunder 30/1600 PCI Card	$1199
R013 1072	Radius ThunderColor 30/1152 PCI Card	$1599
R013 1073	Radius ThunderColor 30/1600 PCI Card	$1999
R013 1018	Radius VideoVision Studio 2.5.1	$2399
R013 1077	Radius Telecast Upgrade	$3459
R013 1026	Radius Spigot Power AV	$599

ATI TECHNOLOGIES INC.

A143 1010	ATI XCLAIMGA 2MB PCI Graphics Card	$369
A143 1009	ATI XCLAIMGA 4MB PCI Graphics Card	$499

TRUEVISION

T043 1001	Targa 2000 (PCI Mac)	$3995

INTEGRATED MICRO SOLUTIONS

I143 1001	IMS Twin Turbo 128M 4MB PCI	$579

NUMBER NINE VISUAL TECHNOLOGY

Imagine 128 True 128 Bit PCI	N080 1003 4MB	$729
	N080 1002 8MB	$1169

GRAPHICS TABLETS

WACOM

BEST BUY w/Painter 4.0

W010 1026	ArtPad II 4x5 with Erasing Pen	$139	W010 1033		$419
W010 1028	ArtZ II 6x8 with Erasing Pen	$298	W010 1034		$578
W010 1029	ArtZ II 12x12 with Erasing Pen	$425	W010 1035		$705
W010 1030	ArtZ II 12x18 with Erasing Pen	$695	W010 1036		$975

ACCELERATORS

DAYSTAR DIGITAL

D040 1018	DayStar Turbo 040	$599
D040 1057	DayStar 100MHZ PowerCard 601	$969
D040 1043	DayStar 100MHZ PowerPro 601	$1199
D040 1039	DayStar 66MHZ Turbo 601 for IIci	$839
D040 1050	DayStar 100MHZ Turbo 601 for IIsi, IIci, Performa, IIvx, IIvi	$1139

MODEMS

FAST MAC

B030 1007	Fast Mac V.34 28.8 Fax/Data Modem	$139

BEST DATA Merging Multmedia & Communications

B020 1001	Best Data 2834FLXMAC 28.8 V.34 External Mac	$155
B020 1003	Best Data 2834VLXMAC 28.8 V.34 External Mac w/Voice Mail	$188

GLOBAL VILLAGE COMMUNICATION

G050 1006	TelePort Gold II	$109
G050 1016	TelePort Platinum	$199
G050 1002	PowerPort Mercury for PB 5xx	$325
G050 1019	PCMCIA 28.8KBPS Fax/Data/10BaseT Ethernet	$499
G050 1020	PowerPort Platinum PCMCIA Card 28.8kbps Fax/Data	$339

Megahertz

M070 1021	28.8Kbps PC Card modem w/XJACK®	$295
M070 1022	14.4Kbps PC Card modem w/XJACK®	$130

TDK

T210 1001	28.8Kbps V.34 Data/Fax PCMCIA modem Card	$249

NETWORKING

ASANTÉ

A120 1010	10BaseT FriendlyNet Media Adapter FN10TA	$39.95
A120 1023	Thick/10BaseT Hub MCiNB-10T	$109
A120 1003	10BaseT Hub (8 RJ45 ports, 1 AUI & 1 BNC) 10THUB/8	$149
A120 1062	10BaseT Hub (12 RJ45 ports, 1 AUI & 1 BNC) 10THUB/12	$149
A120 1032	ASANTÉ Micro ASANTÉPRINT 10BT	$285

Dayna

D300 1039	DaynaPort CS-T 10BT Comm Slot Performa	$79
D300 1029	DaynaStar MiniHub 8 RJ45 10BT	$109

NEW LOW PRICE — $1799

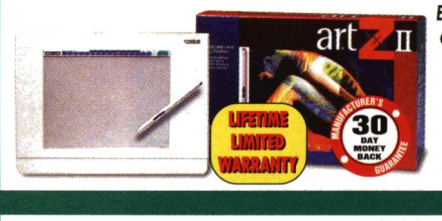
radius IntelliColor 20e

COMPATIBLE WITH POWER MACINTOSH

R016 1009

WACOM — $298

ARTZ II 6" X 8" GRAPHICS TABLET



Edit images, paint, draw and develop your technique to create stunning art with a new Wacom Graphics tablet!

W010 1028

EPSON — $1179

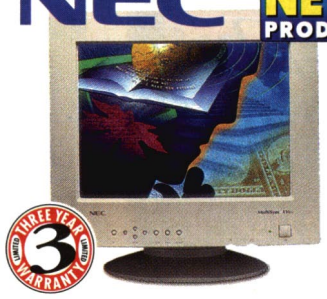
ES-1200C Scanner

2 YEAR WARRANTY

High detailed 4800dpi, 30-bit color scanning.

E045 1003

NEC — NEW PRODUCT — $799



MultiSync XV17+

17" Color Display

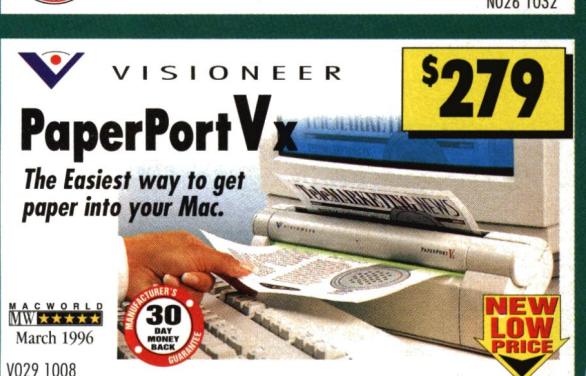
3 YEAR WARRANTY

N026 1032

VISIONEER — $279

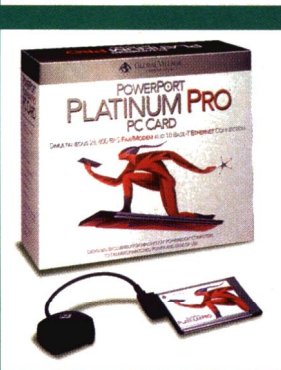
PaperPort Vx

The Easiest way to get paper into your Mac.



MACWORLD March 1996

V029 1008



5 Year Warranty — $499

G050 1019

GLOBAL VILLAGE COMMUNICATION

PowerPort Platinum Pro

28.8 & Ethernet

Source Code 65126

ClubMac®

1-800-258-2622

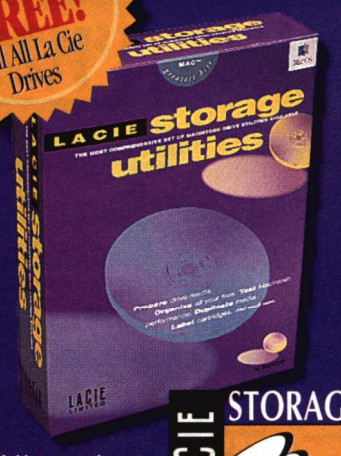
1-800-258-2622 1-800-258-2622 1-800-CLUBMAC 1-800-258-2622

General Sales	24 Hours a Day, 7 Days a Week (800) 258-2622	Customer Service	M - F 7am - 5pm PST (800) 551-6398
Inquiries/International Sales	24 Hours, 7 Days a Week (714) 768-8130	Technical Support	M - F 7am - 5pm PST (800) 854-6227
Corporate/Education Sales	M - F 5am - 5pm PST (800) 258-2621	24-Hour Fax	(714) 768-9354

LACIE LIMITED

offers a world of storage solutions

La Cie Storage Utilities FREE!* Will All La Cie Drives



All products bearing this Storage Utilities mark include acclaimed Silverlining Disk management software plus four other vital performance enhancements, a $99 value... ***FREE!***

1995 MAC HOME JOURNAL READERS' CHOICE

MAC HOME JOURNAL

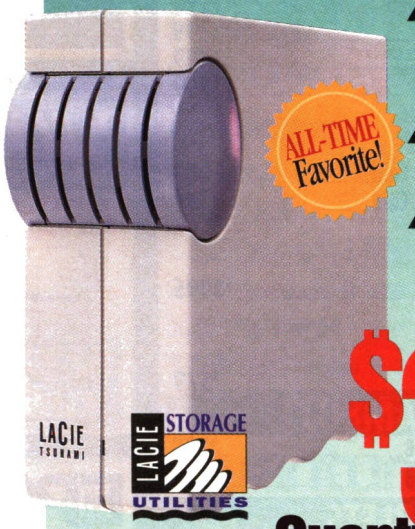
I.D. Magazine 40TH ANNUAL DESIGN REVIEW WINNER 1994

Industrial Design Excellence Award SILVER 1994

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST

MACWORLD MW EDITORS' CHOICE

TSUNAMI HARD DRIVES

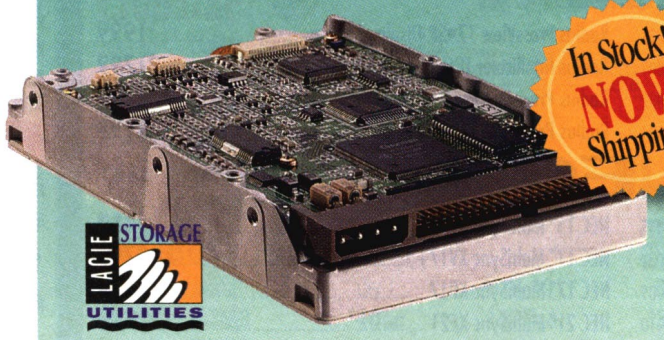


ALL-TIME Favorite!

- Complete with switchable active termination, cables and La Cie Storage Utilties.
- High-speed drive and disk-controller technology.
- Up to 4.3GB capacity in a 6.5"x8.5"x2.2" compact case.

$319 Quantum 1080 MB

INTERNAL HARD DRIVES



In Stock! NOW Shipping!

- High-performance drive and controller technology.
- Built-in SCSI interface.

$289 Quantum 1280 MB

3.5" Hard Drives

Brackets available for $10 with internal hard drive purchase.

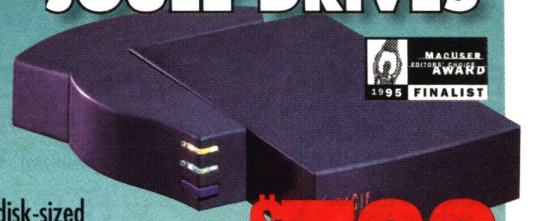
850MB Quantum Trailblazer	5400 rpm	3 yr. warr.	$269
1080MB Quantum Fireball	5400 rpm	3 yr. warr.	$319
1280MB Quantum Fireball	5400 rpm	3 yr. warr.	$349
2160MB Ultrastar ES IBM	5400 rpm	3 yr. warr.	$599
4.3GB Quantum Atlas	7200 rpm	5 yr. warr.	$1099

850MB Quantum Trailblazer	5400 rpm 3 yr. warr.	$199
1080MB Quantum Fireball	5400 rpm 3 yr. warr.	$249
1280MB Quantum Fireball	5400 rpm 3 yr. warr.	$289
2160MB Ultrastar ES IBM	5400 rpm 3 yr. warr.	$499
4.3GB Quantum Atlas	7200 rpm 5 yr. warr.	$999

PORTABLE JOULE DRIVES

LACIE STORAGE UTILITIES

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST



- Share hard disk-sized files with diskette convenience.
- Docking provides new security and backup solutions.

$799 Joule 2 GB

3.5" Hard Drives

850MB Quantum Trailblazer	3 year warranty	$329
1080MB Quantum Fireball	3 year warranty	$369
2160MB IBM Ultrastar ES	5 year warranty	$799
2210MB Quantum Capella	5 year warranty	$799

Joule Bases – Supports Stacks Up To 6 Drives High

850MB Quantum Hard Drive	3 year warranty	$389
1080MB Quantum Hard Drive	3 year warranty	$429
230MB Optical	1 year warranty NEW!	$529

Joule RAID

Quantum drives bundled with Trillium Research Software configurable to levels 0, 1, 4 & 5.		RAID Drives only	RAID with SCSI CARD
4.2GB	3 year warranty	$1999	$2299
8.4GB	3 year warranty	$3499	$3799
16.8GB	3 year warranty	$6999	$7299
25.8GB	3 year warranty	$9999	$10299

APPLE EXTERNAL HARD DRIVES

1995 MAC HOME JOURNAL READERS' CHOICE

The only hard drive backed with Apple engineering. For a local reseller or catalog resource call 1-800-999-0499

Sold exclusively by these and other fine Authorized Apple Resellers:

COMPUSA

CREATIVE COMPUTERS MacMall YOUR MAC SUPERSOURCE!

The Mac Zone

COMPUTER City

MacWAREHOUSE

MacConnection

MICRO CENTER

LACIE LIMITED

Mon.– Fri. 5AM-7PM & Sat. 8AM-NOON PST
International 503-520-9000
Fax 503-520-9100 (24 hrs.)
http://www.lacie.com/~lacie

* La Cie Storage Utilities FREE with the purchase of a La Cie Drive. Call for details, conditions, limited money back guarantee, and free offers. Prices do not include shipping and only apply to products shipped within the continental United States. Add sales tax where applicable. Tsunami, Joule, Joule Portable, La Cie Term, Silverlining, La Cie and the La Cie logo are trademarks of La Cie, Ltd. Apple, the Apple logo, and Macintosh are registered trademarks of Apple Computer, Inc. registered in the United States and other countries used under license therefrom. All other trademarks are the property of their respective companies. All prices, specifications, terms, warranties, descriptions, products and services herein are subject to change without notice or without recourse. © Copyright 1996 La Cie, Ltd. All rights reserved.

SILVERSCANNER
DESKTOP SCANNERS

Silverscanner DTP Complete
Desktop color, 400x800dpi interpolated to 3200 dpi.
- Photoshop LE
- Read-It Pro OCR
- Silverscan

$899

Silverscanner III Package 1
Pro color, 600x1200dpi interpolated up to 4800 dpi.
- Color It!
- Read-It Pro OCR
- Silverscan

$1499

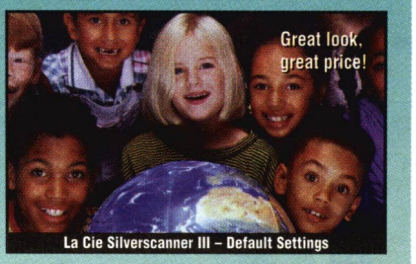
Silverscanner III Package 2
Pro color, 600x1200dpi interpolated up to 4800 dpi.
- Photoshop (full)
- Read-It Pro OCR
- Silverscan

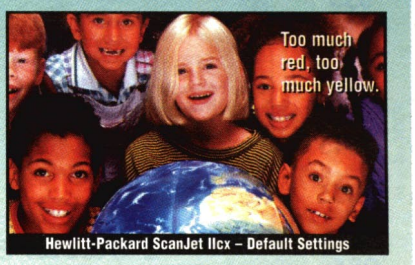
$1799

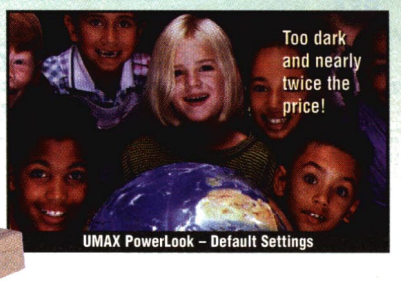
No matter which software bundle you choose, you'll also receive Silverscans' award-winning scanning software giving you professional scans.

Transparency Adapter **$799**

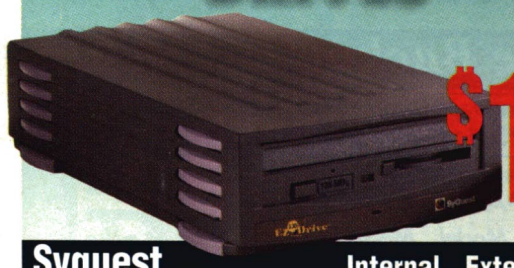
Sheet Feeder **$499**







SYQUEST DRIVES

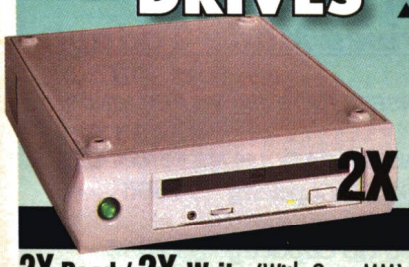


$197 EZ135

Syquest	Internal	External	Cartridge
EZ135MB Includes FREE cartridge 2 year warranty	$197		$19.95

CD-R DRIVES

- CD-Rs ship with Gear Multimedia ($500 value!)
- Low cost media for backup.
- 1 MB Cache.
- Exclusive packet writing.



$989 2X Read/Write

2X Read / 2X Write (With Gear MM)		$989
650MB CD-R Disk 74 Minutes	10 Disk Pack	$79

OPTICAL AND DAT DRIVES

LaCie Storage Utilities

- Optical is the new standard in removable reliability.
- DAT – The ideal medium for data backup.

$1999 2.6GB Optical

Other Optical		
230MB PowerBook Internal	1 year warranty	$399
230MB Internal	1 year warranty	$399
230MB External	1 year warranty	$469
230MB Optical Cartridge		$19.95
2.6GB External	1 year warranty	$1999
2.6GB Optical Cartridge		$99

DAT Drives Includes Retrospect	Internal	External
8.0GB Internal DAT DDS-2	$799	$899
8.0GB Turbo DAT DDS-2	$1049	$1099

LACIE LIMITED

offers

award-winning customer support

30 Day Money Back Guarantee

Toll Free Technical Support

Factory Direct Quality & Value

Ready to Plug And Play

Toll-free tech line:

1-800-288-9919

Call 1-800-999-1816

AMERICAN EXPRESS VISA MasterCard

Seagate
Elite 9.0GB
11ms Seek
Only! $1995 *Internal*

Quantum
Atlas 4.3GB
8 ms Seek
Only! $995 *Internal*

CONNER
2.1GB C2105
9 ms Seek
Only! $575 *Internal*

IBM
DeskStar 540MB
9 ms Seek
Only! $165 *Internal*

Toshiba
4x CD ROM
150ms Seek
Only!$195 *External*

Ask about the exclusive ProDirect *90 DAY PERFORMANCE GUARANTEE* and receive *FREE* shipping!

Quantum

√	**420 MB *TRAIL BLAZER***		$149	$209
	11 ms Seek	4500 RPM 128K Buffer 3 Year Warranty		
	535 MB *Performance !*		175	235
	9 ms Seek	5400 RPM 512K Buffer 5 Year Warranty		
	850 MB *Value!*		195	255
	11 ms Seek	5400 RPM 128K Buffer 3 Year Warranty		
	1080 MB *Fireball*		255	315
	11 ms Seek	5400 RPM 128K Buffer 3 Year Warranty		
	1280 MB *Fireball II*		295	355
	11 ms Seek	5400 RPM 128K Buffer *5 Year Warranty*		
	2.2 GB *Saturn*		635	695
	8.5ms Seek	5400 RPM 1024K Buffer 5 Year Warranty		
√	**2.0 GB Atlas *New Low Price!***		735	845
	8ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
	4200 MB Grand Prix		985	1045
	8.6 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
	4.3 GB Atlas		995	1055
	8ms Seek	7200 RPM 2048K Buffer 5 Year Warranty		

Fast & Wide SCSI AV Drives

√	**2.0 GB Atlas**		885	985
	8ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
√	**4.2 GB Grand Prix**		1025	1125
	8ms Seek	7200 RPM 512K Buffer 5 Year Warranty		

- PowerStor™ active termination with the flip of a switch.
- 5 Year 24 Hour Replacement Warranty
- Optional Fixed Daisy Chain Connector... Puts an end to your cable nightmares
- On/Off switch Conveniently located on the FRONT of our cabinet.
- Power and Activity light located on front bezel

Featured Products

New! Fast & Wide Conversion Kit (68 to 50 Pin)
Utlize the Industries fastest technology on your standard SCSI bus TODAY. Lifetime Warranty!
Only $95 or $75 w/drive purchase.

Quantum 127 MB *Powerbook Drive*		$135	$195
Q Daytona,4500RPM, 17 ms seek, 128K cache,	1 year warranty		
Toshiba 540 MB Powerbook Drive		$265	$325
Toshiba 12 ms Seek	4500 RPM 128K Buffer 1 Year Warranty		
IBM 810 MB Powerbook Drive		$495	$325
IBM TravelStar12 ms Seek	4900 RPM 128K Buffer 1Year Warranty		
Quantum 1280 MB *Fireball II*		$295	$355
11 ms Seek	5400 RPM 128K Buffer *5 Year Warranty*		
Quantum2.0 GB Atlas		$735	$845
8ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
Conner 4.2 GB *Fast AV Performance!*		$1025	$1085
8 ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
Seagate 9.0 GB Fast & Wide Elite		$2195	$2325
11 ms Seek	5400 RPM 1024KBuffer 5 Year Warranty		

Seagate

1080 MB		$265	$325
9 ms Seek	5400 RPM 512 KBuffer 5 Year Warranty		
4.3 GB Hawk Fast & Wide		1135	1235
9 ms Seek	5400 RPM 512K Buffer 5 Year Warranty		
2.5 GB Barracuda 2		765	825
8 ms Seek	7200 RPM 1024K Buffer 5Year Warranty		
4.3 GB Barracuda 4		1185	1245
8 ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
2.5 GB Fast & Wide Barracuda 2		825	925
8 ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
4.3 GB Fast & Wide Barracuda 4		1245	1345
8 ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
9.0 GB Elite		1995	2095
11 ms Seek	5400 RPM 1024KBuffer 5 Year Warranty		
9.0 GB Fast & Wide Elite		2195	2325
11 ms Seek	5400 RPM 1024KBuffer 5 Year Warranty		

90 Day Performance Guarantee for Details

New! CONNER New!

1060 MB *Quiet & Reliable*		$265	$325
9 ms Seek	5400 RPM 512 KBuffer 5 Year Warranty		
2.1 GB *Fast AV Performance!*		695	755
8 ms Seek	7200 RPM 512K Buffer 5Year Warranty		
2.1 GB *Fast & Wide -AV Performance*		825	925
8 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
4.2 GB *Fast AV Performance!*		1025	1085
8 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
4.2 GB *Fast & Wide -AV Performance*		1125	1225
8 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		

MICROPOLIS

GOLD Series AV Drives *Recommended most for AV work*

2.1 GB • ***Also Available in Fast & Wide SCSI 2***		675	735
Fast SCSI 2 8.5 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
4.3 GB • ***Also Available in Fast & Wide SCSI 2***		1070	1130
Fast SCSI 2 8.5 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
9.0 GB • ***Also Available in Fast & Wide SCSI 2***		2035	2135
Fast SCSI 2 11ms Seek	5400 RPM 512K Buffer 5 Year Warranty		

IBM

IBM drives utilize IBM's advanced Magneto-Resistive(MR) disk technology which increases the amount of data stored per disk surface and reduces the number of disks and heads making the IBM series more slim-lined , reliable & Faster

540 MB *DeskStar*		$165	$235
9 ms Seek	5400 RPM 128K Buffer 5Year Warranty		
√ **1080 MB *DeskStar MR Heads Fast!***		255	315
10 ms Seek	5400 RPM 512K Buffer 5 Year Warranty		
2.0 GB *UltraStar ES* *Value!*		495	555
9ms Seek	5400 RPM 512K Buffer 5 Year Warranty		
2.2 GB *UltraStar XP* *AV Performance!*		755	815
7.5 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		
4.3 GB *UltraStar XP* *AV Performance!*		1165	1225
8 ms Seek	7200 RPM 512K Buffer 5 Year Warranty		

MacIntosh formatted capacities vary.. Call our hard drive experts!

FUJITSU

530 MB		$175	$235
9 ms Seek	4500 RPM 256K Buffer 3 Year Warranty		
1.2 GB		285	345
9 ms Seek	5400 RPM 512K Buffer 3 Year Warranty		
2.1 GB		685	745
8.5ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		
4.2 GB		1075	1135
8ms Seek	7200 RPM 1024K Buffer 5 Year Warranty		

SyQuest TECHNOLOGY

DRIVES

Capacity	Model	External
88 MB	SQ5110C	$345
135MB	SQEZ135	225
200 MB	SQ5200	395
270 MB	SQ3270	405

CARTRIDGES

Capacity	Price
44 MB	$40
88 MB	45
135 MB	19
200 MB	70
270 MB	58

ALWAYS CALL FOR THE BEST PRICES ON ALL MAC

PCI/Nubus Fast & Wide Accelerators

Adaptec 2940WM $295
Adaptec's Power Domain 2940W-PCI to Fast/Wide SCSI 3 Accelerator. Increase transfer rates up to 20MB/sec. Ideal for Disc Arrays.

√ **Atto Express PCI** $345
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Ideal solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.

Atto Silicon Express 2 $485
SCSI 1&2 supports transfer rates up to 10.0 MB/sec., multiple block sizes, parallel processing capability.Ideal for graphic design, multimedia applications.

Atto Silicon Express 4 $829
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/second. Full 16 Bit wide support for disk arrays.

New! FWB JackHammer $455
Fast/Wide 16BIT SCSI 2 accelerator card for Apple's Nubus based computers. Supports fast/wide SCSI 2 (16 Bit) transfer rates up to 20MB/sec. and fast SCSI 2 (8 Bit) transfer rates up to 10 MB/sec.

New! FWB PCI JackHammer $385
Single channel RISC based PCI to Fast/Wide SCSI 3 accelerator card for Apple's PCI based computers. Your best solution for your audio, video, prepress, and real time applications. Transfer rates up to 20MB/sec.

REMUS Disk Array RaidLevel 0 - 5 $Call

Tape Backup Drives

All ProDirect Tape Drives Include The Latest Version of Retrospect and 1 Piece of Media.

HEWLETT PACKARD

Capacity	Model	Media	Int.	Ext.
2.0 GB	35470	4mm	$925	$985
3-5 GB	35480	4mm	995	1055
4-8 GB	1533A	4mm	1235	1295
24-48 GB	1553A Auto Tape Loader		3195	3295

Exabyte

Capacity	Model	Media	Int.	Ext.
2-5 GB	8205XL	8mm	$1395	$1485
7-14 GB	8505XL	8mm	2055	2115

Quantum *Fastest Drives Made Today!*

DLT2000XT **$3399**
30GB Capcity•*TRANSFER RATE 150 MB PER MINUTE*

DLT4000 **$5435**
40GB Capcity•*TRANSFER RATE 180 MB PERMINUTE*

DLT4500 • ***200 GB Capacity*** **$9895**
TRANSFER RATE 180 MB PERMINUTE

DLT4700 • ***280 GB Capacity*** **$11395**
TRANSFER RATE 180 MB PERMINUTE

CD ROM & CD WRITERS

4x Toshiba CD ROM 150 MS seek	$195
4 x 6 Disk Pioneer CD ROM Changer	$395
6.7x Toshiba CD ROM *New Price!* 102 ms Seek256 K Cache	$325
2x Yamaha CDE 1020 2x CD Writer• 4x CD ROM	$1175
4 x Yamaha CDE 100 *New Price!* 4 x CD Writer•Multisession•Selectable Speed	$1895

Includes TOAST PRO CD Writer Software
Prices are external and include all cables and software for a PLUG & PLAY Solution.

ProDirect

8:00am - 7:00pm (CST) Mon.-Fri.
10:00 am - 3:00 Saturday

VISA DISCOVER NOVUS AMERICAN EXPRESS Cards MasterCard

NEVER A SURCHARGE!
****NO SALES TAX!***

800-524-9952

Fax24hoursaday612941-1109
International orders call 612-941-1805
In Minnesota call 612-941-1805

All prices are subject to change without notice. Returned products are subject to a restocking fee. International customers pay all shipping charges. All shipping charges are non-refundable. To return merchandise call for an RMA number. All RMAs must be returned within 10 business days of issuance. Customers are responsible for all returned product shipping charges.

radius. Quantities are Limited... Supplies Won't Last... SUPERMAC RASTEROPS

AWARD WINNING PRODUCTS AT OR BELOW DEALER COST!

DISPLAYS

TWENTY ONE INCH DISPLAYS

21 Inch DiamondTron Monitor — from $1999*
- Rated Superior to Trinitron
- Largest Aperture Grille monitor available
- Up to 1600x1200 on Macs and PCs
- Full Digital Control from Keyboard

Radius SuperMatch 21 TXL	from $1699*
Radius PrecisionView 21	$CALL
Radius PressView 21sr	from $2899*
Radius PrecisionView 21T	$CALL
SuperMac PressView 21 "Editors Choice"	$1999*

Radius PrecisionColor Display 21 — $1499*
- 1600x1200 to 1024x768
- Razor sharp dot pitch
- Best for color accuracy
- Selectable color temperatures

Compare at $2399

RasterOps SuperScan MC 21	$CALL
Radius Multiview 21	$CALL
Radius 21 inch Grayscale Display	$799

*With qualifying videocard, accelerator, or computer purchase

TWENTY INCH DISPLAYS

TWO PAGES FOR THE COST OF ONE!
While Supplies Last!–Your Choice of...

Retail $1999 **SuperMac SuperMatch 20 PLUS** — $999*
- Up to 1152x870 resolution
- Advanced Digital Controls
- Non-glare, Dynamic-Focus CRT

Best Screen Uniformity!

Radius PrecisionColor 20v	$1099*
Digital 20 inch Display Up to 1280x1024	$1399
RasterOps 20 Multimode	$1299
Radius PrecisionColor 19	$899

Radius IntelliColor Display 20 — from $1499* Retail $2399
- MacUser, MacWorld, MacWeek Editor's Choice
- 1600x1200 to 640x400

Apple Multiple Scan 20 Display	$CALL
Ikegami 20 inch Grayscale Display	$699
Radius 20 inch Grayscale Display	$699

*With qualifying videocard, accelerator, or computer purchase

SEVENTEEN INCH DISPLAYS

SuperMac/E-Machines T16IInr — $599*
Compare at $1299
- High Grade Studio Trinitron Series
- .25mm multi-resolution
- Editors Choice
- 1024x768 to 640x480 resolutions

SuperMatch 17T	$799*
PrecisionColor Display 17	from $899
PrecisionView 17	$CALL
Radius PressView 17sr [redacted]	$CALL
SuperMac SuperMatch 17	from $499*

*With qualifying videocard, accelerator, or computer purchase

PORTRAIT DISPLAYS

Radius Color Pivot LE — $399*
We have cards for SE/30, LC, IIsi, Nubus, and Quadras

* With purchase of video card.

PrecisionColor Pivot	$599
Grayscale Pivot	$399
Radius Full Page Display	$CALL
Apple Portrait Display	$399
Portrait Display Labs 1700	$CALL
E-machines ColorPage 15 with NUBUS card	$499

COLOR CALIBRATORS

SuperMac Display Calibrator	only $199*
SuperMac Display Calibrator PRO	$499
Radius Mac ProSense Calibrator	$799

*With monitor purchase

VIDEO CARDS

1600x1200 PCI & NUBUS

Radius Thunder IV GX 1152	$BELOW COST
Radius Thunder II GX 1360 & 1600	from $999
Radius Thunder IV GX 1360 & 1600	from $1599
Radius Thunder 24/GT (accepts PhotoEngine)	$CALL
Radius ThunderColor 30/1152 & 1600	$CALL
IMS Twin Turbo 128M (4MB with MPEG)	$599
Radius PrecisionColor 8/1600	$499
EA Research EAsycolor 1600/16	$CALL

21" RESOLUTIONS

Radius PrecisionColor Pro 24X	$699
Thunder 8 "Fastest 8 bit card ever"	$CALL
Thunder 24 (DSP available)	$CALL
Radius LeMans GT	$799
SuperMac Ultura LX*	from $899
RasterOps Horizon 24*	from $999
RasterOps 24XLTV	$1999
RasterOps Prism GT	$CALL
Radius PrecisionColor 8XJ	$499

*DSP Available

20/19" RESOLUTIONS

SuperMac Spectrum 24 Series V	$599
Radius PrecisionColor Pro 24XK	$CALL
SuperMac Futura MX	$499
RasterOps PaintBoard Lightning	$CALL
SuperMac Spectrum 8	$199
PowerView/SuperView for Powerbooks	$199/$299

17/16" RESOLUTIONS

Radius 24 bit video cards	from $199
Radius PrecisionColor Pro 24XP	$CALL
SuperMac Futura SX	$299
RasterOps 24 MX	$399

PHOTOSHOP ACCELERATION

"If you frequently need to retouch large image files in Adobe Photoshop using such filters as Gaussian Blur, Sharpen, and Emboss, then you need either to have the patience of Mother Teresa or a digital signal processor (DSP) board." –Macworld

Radius PhotoEngine — from $399*
- Four AT&T 3210 66MHz DSPs
- Accelerates Photoshop Filters
- Up to 15x acceleration on all Macs
- MacUser Editor's Choice
- Available in Daughtercard or NUBUS versions

Standard video cards do not provide acceleration for many critical Photoshop functions, because they do not have on-board Digital Signal Processors (DSPs). When installed in your system, DSPs are used by Photoshop to process time consuming commands more than 10-times faster than built-in video.

Greatest Improvement Areas:
- Filters such as those in the Sharpen and Blur submenus
- Mode conversions such as RGB to CMYK color separations
- Image transformations such as rotations, effects, and resizes.

Radius PhotoBooster (NUBUS or Rocket/PDS)	$199
SuperMac ThunderStorm DSP Boards	$299
Radius Color Engine for Thunder 30 Cards	$CALL
Radius PhotoEngine Nubus	$CALL
Adobe Photoshop 2.5 Deluxe CD Edition	$CALL
RasterOps Paintboard DSP Upgrades	$CALL
Radius GX (CMYK acceleration) Upgrades	from $349

Stop wasting valuable time: Imagine using filters that normally take twenty minutes to process finishing in only two to four minutes! How much additional time would you save in just one week? You can't afford to be without DSPs.

PRINTERS

We have purchased excess printer inventories DIRECT from the manufacturer, so you can save over 50-75% on most of our current printers. DO NOT WAIT, as quantities are extremely limited and supplies will NOT last!!

COLOR LASER PRINTERS

Color Laser Printers are the best choice for printing text, graphics and color. They use a similar printing process to monochrome printers and output on standard laser paper, which means your prints will not fade or crease. The cost to add color to your documents is now only a few cents more per page. For a LIMITED TIME ONLY, you can purchase a Color Laser Printer for under $2,000--call now to order!!

QMS Color Laser Printer — from $1999
QMS ColorScript 1000
- Internal SCSI drive
- Powerful RISC processor
- PostScript Level 1, 2 and HP/PCL-5

QMS Magicolor	only $2999
Tektronix 540 Plus	$CALL
Apple Color Laserwriter 12/600PS	$6279
Xerox 4900 series Color Laser	from $5589

TWO PAGE COLOR PRINTERS

Radius Proof Positive — $BELOW COST
- Award Winning dye-sublimation printer
- Full-bleed two page and one-page models
- True Adobe Postscript Level 2
- All consumables available

11x17 Tabloid Color Printers	from $2999
Fargo Pictura 310 Color Printer	$CALL

- Up to 12"x18" output
- Dual-function dye sub and wax thermal
- Editors Choice

QMS ColorScript 210/230	$CALL

- Up to 11x17" full-bleed output

TABLOID LASERS

QMS 860 Hammerhead 600-1200dpi — from $1999
- 11 x 17 full bleed
- PostScript Levels 1&2
- 8ppm heavy-duty Canon engine
- Powerful RISC processor

Hewlett-Packard 4mv	$CALL
GCC SelectPress 1200x1200dpi	$4999
QMS PS2210/2220	$1499/$1699

- 20,000 page monthly duty cycle
- 22ppm • Dual-tray input

HOME/OFFICE

360 DPI Color Printer — $199
Star SJ-144MC
- Full-Color output at crisp, laser-quality 360dpi Printer
- Heat Fusion process avoids Ink-jet smear
- 2-year Manufacturer's Warranty
- ADD box of 3 Color Cartridges ($57 value) only $29

* With purchase of any other item in ad

Hewlett-Packard 5mp	$CALL
Apple Laserwriter Select 360	from $1199
QMS 815/815mr 8ppm, 600dpi	$699/$999
QMS PS 825/825mr 600dpi	$799/$1099
QMS 1060 10ppm, 600dpi	$CALL
QMS PS 1500 15ppm	$1299
QMS PS 1700 17ppm, duplex optional	$1999
Apple OEM Laserwriter 8ppm	$499
Seikosha SP-2400AP dot matrix	$179
Apple Imagewriter/Stylewriter	$CALL
GCC WriteMove/WriteMove II	$149/$249

New and Reconditioned Models of Most Items Available

CPU SPECIALS

POWER MACS

PowerMac Performa 6200 — from $999*
- Power PC 603/75MHz RISC processor
- Ready for Apple TV/Video/Presentation Systems
- Internal quad-speed CD-ROM bay

PowerMac Performa 5200CD — $BELOW COST
- Integrated 15" Trinitron Display & AV ports
- Power PC 603/75MHz RISC processor
- Internal quad-speed CD-ROM drive with software
- 14.4Kbps modem included

Power Macintosh 7100/80 8/700/CD — $1299*
- 80MHz PPC 601 RISC processor
- AV upgrade supports full motion video
- Expandable, with three Nubus slots

*CPU only, with Qualifying Card or Monitor Purchase

All PCI PowerMacs Available -- CALL for Lowest Prices Ever!!

PowerMac 8100 16/1GB/CD	$IN STOCK
Radius 81/110 16/730/CD	$CALL
PowerMac 6100 8/350/CD	from $999

MAC II SERIES SYSTEMS

Mac IIsi Color Pivot System — $299 CPU only
- Macintosh IIsi with 5MB RAM/80MB HD
- Radius Color Pivot Display
- Extended 105-key Keyboard $799 Complete
- FREE ClarisWorks!

Add Radius Card for Display to TV	only $99
Macintosh II 4/40 w/video card installed	$299*
Macintosh IIfx 4/250 50MHz upgrade available	$499*
Add Apple Cache Card to Macintosh IIci	$39

*with purchase of any qualifying monitor

Mac IIcx 15" Color System — $275 CPU only
- Macintosh IIcx with 4MB RAM/80MB HD
- E-machines ColorPage 15" Display
- NUBUS accelerated video
- Extended 105-key Keyboard $849 Complete
- FREE ClarisWorks!

Add MacRecorder to Mac IIcx	only $99
Add Ethernet card to Mac IIcx	from $99
Mac Plus System w/Keyboard & Mouse	only $149
Macintosh SE30	from $299
ADD an External Modem to any CPU	$49

POWERBOOKS

PowerBook 5300 series	$CALL
PPC Upgraded Color PowerBooks	from $2299
PowerBook 520c	from $1499
PowerBook 190 series	$CALL
PowerBook 160/180	from $999
PowerBook Duo 210/230	from $699
PowerBook Duo 270c/280c	$CALL
Ethernet Dock for Powerbook Duo's	$399*
Apple Duo Docks	from $499*
Add GCC WriteMove II portable printer	$199*

* with purchase of a PowerBook

CPU UPGRADES

Daystar PowerPC and 040 Accelerators	$CALL
Radius Rockets 33MHz to 40MHz	from $399
Stage Two Rocket 40MHz w/FPU	$699

-Includes SCSI II Booster and RocketShare

Rocketshare multiprocessing software	$299
Speed upgrades for all 680X0 and PPCs	$CALL

QUADRA BLOWOUT

Quadra 700 8/80/CD — $799*
- Powerful '040 processor
- Upgradable to Power PC
- NuBus expansion slots

Quadra 950 8/500, NEW — $1399
* with purchase of any qualifying monitor or video card

Quadra/Centris 610 8/80/CD — $699*
- Powerful '040 processor
- Multi-media ready with internal CD-ROM
- Built-in video supports up to 21" color monitors
- Software bundle with ClarisWorks, CD titles

Nubus Adapter for Quadra 610 — $99*

Macintosh Quadra 605/LC475 — $599 CPU only
- NEW CPU, with 4MB RAM and 250MB HD
- Powerful '040 processor
- Radius Full Page Display $899 Complete
- Apple Design Keyboard
- ClarisWorks

Add Radius Card for Display to TV only $99

DIGITAL VIDEO

Video Vision Studio 2.5.1 — $1999*
- 24bit Full-Screen, Full-Motion Video
- Includes Adobe Premiere and VideoFusion
- Breakout bar supports dual input

* with purchase of Studio Array

Video Vision Studio Array — $1999
- 4GB RAID Customized for Video Vision
- Includes FWB Jackhammer SCSI accelerator
- Chain up to three Arrays together (4GB,8GB,12GB)

Video Vision Telecast — from $2999
- Full-motion, broadcast-quality video
- Available as upgrade for Video Vision Users

TRUEVISION Targa 2000 PCI/NUBUS	$CALL
RasterOps 24XLTV	$1999
RasterOps 24STV	$999
RasterOps 24MXTV	$CALL
RasterOps MoviePak II JPEG Daughtercard Upgrade	$CALL
Spigot II Tape Now Bundled with Adobe Premiere	$499
Apple PowerMac AV Card	$CALL
VideoSpigot Cards Nubus/LC/IIsi	from $99*
Radius Spigot Power AV	$799

*With purchase of Adobe Premiere

DRIVES

1GB OPTICAL NOW WITH 4MB CACHE!

Don't bother building a library of tiny 44, 200 or 230 MB optical and Syquest cartridges. After buying only 10 1.0GB cartridges your savings will pay for this drive.

MAXOPTIX TAHITI 1GB — from $599
- 4MB Cache, 9x more than 230 MB Optical Drive
- Maximum Reliability with 25 year operating life
- Reads 650MB and WORM cartridges

Pinnacle Micro APEX 4.6GB Optical Drive	$CALL
Pinnacle Micro CD-Recorders	from $799
NEC 4x External CD-ROM Multimedia Kit	$249
NEC 3x External CD-ROM Multimedia Kit	$199
Apple or NEC 2x External CD-ROM Multimedia Kit	$179
Iomega ZIP, JAZ drives	from $199
Apple 250mb HD internal/external	$125/$200
Apple 350mb HD internal/external	$175/$250
Apple FDHD auto insert floppy	$199
FWB Jackhammer SCSI accelerator PCI	$399
FWB Jackhammer SCSI accelerator NUBUS	$499
Daystar SCSI PowerCard accelerator NUBUS	$299

COOL STUFF

WGS 6150 16/500CD/AppleShare	$2499
WGS 8150 16/1GB/CD/DAT/AppleShare	$3999
Daystar SCSI/Link External Ethernet Adapter	$299
Apple 8•24 GC	$399
E-machines Big Picture 17" gs monitor & card	$499

CRA Systems, Inc.
300 South 13th St., Waco, TX 76701
Monday thru Friday 9AM to 8PM CST Saturday 10AM-4PM Sales Dept. Only
Domestic Sales 800.375.9000 Fax 817.750.9050
Consultants/Dealers 817.754.2120 International Sales 817.754.2120

Prices reflect 2% cash discount. Prices subject to change. Not liable for typographical errors. All shipping charges for COD orders to be secured by credit card. Dealers and consultants call for quantity pricing. We ship anywhere.

Since 1986, CRA Systems has been offering a great selection of new and factory clearance technology products. Most of these items have been offered at or below dealer cost due to volume purchases direct from the manufacturers.

CRA SYSTEMS **800/375-9000** http://www.cra-sys.com

CRA SYSTEMS CRA SYSTEMS **800/375-9000** http://www.cra-sys.com CRA SYSTEMS

VIDEO CARD BUYING GUIDE - ALL HARD TO FIND CONFIGURATIONS ARE IN STOCK NOW!!

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Radius FPD Card	Mac Plus	Mono	–	–	–
Radius Pivot Card	SE/30	256	–	–	–
Xceed Color 30hr	SE/30	256	256	256	256
Lapis Color 16	SE/30	Thousands	Thousands	256	256
Lapis Color 24	SE/30	Millions	Millions	256	256
Radius Direct Color/gx	IIsi	Millions	–	–	–
SuperMac Spectrum 8	IIsi	256	256	256	256
SuperMac Spectrum 8.24	IIsi	Millions	256	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Radius FPD Card	Mac SE	Mono	–	–	–
SuperMac Superview	Mac SE	–	–	Mono	–
Radius TPD Interface	Mac SE	–	–	–	Mono
RasterOps 8/LC	LC/PDS	–	–	256	–
SuperMac Spectrum 8	LC/PDS	256	256	256	256
Lapis Color 16 for LC	LC/PDS	Thousands	Thousands	256	256
Micro Conversions 1724	LC/PDS	Millions	Millions	256	256
Lapis Color 24 for LC	LC/PDS	Millions	Millions	256	256

Video Card	Platform	Monitor (Colors) 14/15"	16/17"	19/20"	21"
Double Color SX	Nubus	256	256	16	–
RasterOps 708+	Nubus	256	–	256	–
RasterOps 24L	Nubus	Millions	–	–	–
RasterOps 8/LC	Nubus	–	–	256	–
SuperMac Spectrum 8	Nubus	256	256	256	–
Double Color LX	Nubus	256	256	256	256
Radius Direct Color 24	Nubus	–	–	–	Millions
E-machines Futura MX	Nubus	Millions	Millions	Millions	–

GREAT PRODUCTS... PRICELESS SUPPORT

APS Technologies

HIGH PERFORMANCE 2GB!

7200rpm Performance, 5400rpm Price

JUST $549.95 Internal configuration

MICROPOLIS

APS MS 2000

- ✔ 7.31MB/sec. sust. write, 4.54MB/sec. sust. read
- ✔ 5400rpm mechanism
- ✔ Performs like a 7200rpm drive
- ✔ 5-year warranty

That's right, this incredible drive has the performance you'd expect from a 7200 RPM mechanism but with a 5400RPM drive's price -and reliability! The APS MS 2000 formats to 2047MB; delivers sustained reads at up to 4.54 MB/sec. and sustained writes at up to 7.31 MB/sec; has an avg. access time of 20ms and avg. seek of 9.6ms. It has a 5-year warranty and is rated at 650,000 MTBF.

1GB DESKTOP BARGAIN

APS I 1080 IBM.

- ✔ Over 1GB capacity with Fast SCSI-2 interface
- ✔ IBM Magneto-Resistive (MR) head technology
- ✔ 5400rpm mechanism
- ✔ 3-year warranty

$229.95 Internal configuration

Exceptional value, high performance, low power - what more could you ask? The APS I 1080 formats to 1034MB and delivers sustained transfer rates of 3.32MB /sec. (read) and 3.67MB/sec. (write). Rated at 350,000 hours MTBF, the APS I 1080 has a three-year warranty.

2GB WORKSTATION STEAL!

APS I 2160 IBM.

- ✔ 8ms average seek
- ✔ Over 2060MB Formatted capacity
- ✔ The best value for performance and capacity
- ✔ 5-year warranty

JUST $499.95 Internal configuration

MacUser ZD LABS ★★★★

What a deal - 2063MB for under $500! Great performance, IBM MR head technology and 800,000 hour MTBF make this the drive to buy for all those needy workstations.

APS SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS Q 840 Quantum 840 Trailblazer	**811MB** 4500 rpm	MacUser LABS ★★★★	$199.95	$299.95
APS I 1080 IBM 1080 Deskstar XP	**1034MB** 5400 rpm		229.95	329.95
APS Q 1080 Quantum 1080 Fireball	**1042MB** 5400 rpm	◆◆◆◆ MacWEEK, MacUser LABS ★★★★	259.95	339.95
APS Q 1280 Quantum Fireball II 1280	**1222MB** 5400 rpm		299.95	399.95
APS I 2160 IBM Ultrastar ES	**2063MB** 5400 rpm		499.95	599.95
APS MS 2000 Micropolis 4421	**2047MB** 5400 rpm	Power Matched for Power PC	549.95	649.95
APS ST 4200 Seagate ST 15230N Hawk	**4094MB** 5400 rpm	MacUser LABS ★★★★	899.95	999.95

APS IDE DRIVES FOR MACINTOSH

Model	Capacity/Features	Internal
APS Q 1280A Quantum Fireball II 1280	**1222MB** 5400rpm (Fast ATA-2)	$249.95
APS ST 2140A Seagate Medalist ST32140A	**2167MB** 5400rpm (Fast ATA-2)	399.95

Power Matched for Power PC — These products are performance-matched for optimal performance in the Power PC environment.

APS HIGH-PERFORMANCE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0 Micropolis 4221	**1955MB** 7200 rpm	Power Matched for Power PC, MacUser LABS ★★★½	$599.95	$699.95
APS Q 2.0 Quantum Atlas XP32150	**2050MB** 7200 rpm	Power Matched for Power PC, MacUser LABS ★★★★	799.95	899.95
APS ST 2.0 Seagate ST 32550N	**2047MB** 7200 rpm	Power Matched for Power PC	749.95	849.95
APS MS 4.0 Micropolis 3243	**4064MB** 7200 rpm	Power Matched for Power PC, MacUser LABS ★★★★	999.95	1099.95
APS Q 4.0 Quantum Atlas XP34300	**4101MB** 7200 rpm	Power Matched for Power PC, MacUser LABS ★★★★½	999.95	1099.95
APS ST 4.0 Seagate ST 15150N	**4094MB** 7200 rpm	Power Matched for Power PC, MacUser LABS ★★★½, ◆◆◆◆	1199.95	1299.95
APS MS 9.0 Micropolis 1991	**8669MB** 5400 rpm		1999.95	2199.95
APS ST 9.0 Seagate ST410800N	**8669MB** 5400 rpm		2199.95	2399.95

APS AUDIO/VIDEO SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0AV Micropolis 4221AV	**1955MB** 7200 rpm	Power Matched for Power PC	$699.95	$799.95
APS MS4.0AV Micropolis 3243AV	**4064MB** 7200 rpm	Power Matched for Power PC	1099.95	1199.95
APS MS9.0AV Micropolis 1991AV	**8669MB** 5400 rpm	MacUser LABS ★★★★	2099.95	2299.95

APS FAST/WIDE SCSI DRIVES

Model	Capacity/Features	Awards	Internal	SR2000
APS MS 2.0W Micropolis 4221W	**1955MB** 7200 rpm	Power Matched for Power PC	$699.95	$799.95
APS Q 2.0W Quantum Atlas XP32150W	**2050MB** 7200 rpm	Power Matched for Power PC	899.95	999.95
APS MS 4.0W Micropolis 3243W	**4064MB** 7200 rpm	Power Matched for Power PC	1099.95	1199.95
APS Q 4.0W Quantum Atlas XP34300W	**4101MB** 7200 rpm	Power Matched for Power PC	1099.95	1199.95

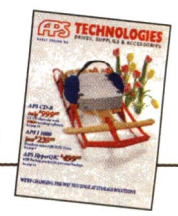
APS SCSI POWERBOOK DRIVES

Model	Capacity/Features	Awards	Internal
APS I 1.2 IBM Travelstar XP	**1160MB** 4900 rpm		$699.95

APS IDE POWERBOOK DRIVES

Model	Capacity/Features	Awards	Internal
APS Q 810 Quantum Europa	**778MB** 3800 rpm, Fast ATA-2		$399.95
APS Q 1.08 Quantum Europa	**1037MB** 3800 rpm, Fast ATA-2	NEW LOW PRICE	474.95

CALL FOR YOUR FREE EARLY SPRING 1996 CATALOG



World Class Winner Macworld 1994 · MACWORLD MW EDITORS' CHOICE · MACWORLD MW SERVICE HERO · Best Technical Support 1994 · BMUG FALL 1994 CHOICE PRODUCT · 1994 MAC HOME JOURNAL READERS' CHOICE · MacUser RECOMMENDS · MACWORLD 1993 World Class Award Winner · MacUser ZD LABS ★★★★★ · MacUser Editors' Choice Award 1993 WINNER · MAC HOME Journal Award · WINDOWS MAGAZINE 1995 WIN 100 · ◆◆◆◆ MacWEEK

APS TECHNOLOGIES

BACKUP REALLY FAST!

Call us 24 hours a day, 7 days a week

APS HyperDAT Pro

POWER MATCHED FOR POWER PC

- ✔ Fastest DAT tape drive available
- ✔ Backup at up to 50MB/minute! Cut your backup time in half!
- ✔ Up to 8GB of storage per 120M DAT tape
- ✔ The new performance standard for network backup

With backup speeds as high as 50MB per minute, the APS HyperDAT Pro is the economical way to cut your backup (and restore) window in half. Ideal for server backups that require minimal downtime, the APS HyperDAT Pro uses standard 120M DDS-2 tapes which hold up to 8GB with compression*, and is compatible with all DDS and DDS-DC compliant tapes and mechanisms. **assumes 2:1 compression ratio*

$1049.95 *External configuration*

MORE MEGS THAN EZ ZIPPIER THAN ZIP!

APS SQ 3270 – 255MB REMOVABLE

- ✔ 2-year warranty
- ✔ 1.7MB/sec. transfer rates
- ✔ Packs up to 255MB on each 3.5" cartridge
- ✔ Best performing removable cartridge drive

WHILE SUPPLIES LAST! **$299.95*** *External configuration*

*Only with the purchase of one SQ 270 cartridge

MacUser ZD LABS

	Capacity	Access	Seek	Read Trans.	Write Trans.	Warranty	Price per MB
APS SQ 3270	255MB	27ms	13ms	1.8m/sec.	1.6m/sec.	2-year	$1.17
Zip	96MB	45ms	33ms	1.0m/sec.	1.0m/sec.	1-year	$2.07
EZ135	128MB	27ms	13ms	1.1m/sec.	0.8m/sec.	1-year	$1.80

FASTEST SERVER BACKUP EVER!

APS DLT30 & DLT40

- ✔ Up to 40GB on a single tape
- ✔ Dual-linear recording for maximum throughput
- ✔ Excellent for server and workstation backups
- ✔ Includes the latest 3.0 Retrospect backup software – FREE

$3999.95 *External configuration*
IN STOCK! **DLT30 with up to 30GB of storage**

$5499.95 *External configuration*
DLT40 with up to 40GB of storage

MACUSER EDITORS' CHOICE AWARD 1995 FINALIST

Ultra-fast server backup and restore, that's what these incredible tape backup systems are all about. With real-life backup speeds as high as 100MB per minute and hardware-compressed data capacities of up to 40GB per tape, the APS DLT series of drives is the ultimate solution for that shrinking server backup window.

MacWorld Magazine World Class Award

MacUser Editor's Choice Award

Consultants Choice Award

APS SYQUEST DRIVES

Model	Capacity/Feature	Awards	Internal	SR2000
APS SQ 3270	**255MB** Our best performing removable cartridge drive	MacUser ZD LABS	N/A	$299.95*
APS SQ 5200	**194MB** Ultimate storage flexibility	MacUser ZD LABS NEW LOW PRICE	N/A	389.95
**While supplies last! CALL NOW!*				*SQ 270 Cartridge $59.95*

APS CD-ROM DRIVES

Model	Features	Awards	Internal	SR2000
APS PD4CD-ROM/Removable Optical	600MB optical storage with 4X CD-ROM in one device		N/A	$499.95*
APS T 3701	**6.7X-SPEED** Sustained data transfer rates up to 1000KB per second!		$299.95	329.95
APS CD-R	**Recordable CD-ROM** FREE TOAST CD-ROM Pro CD recording software ($500 value)		N/A	999.95*
APS CD-R Mastering System 4.0	4X read/4X write recording engine and a 4GB AV scratch disk		N/A	$2999.95†
**While supplies last! CALL NOW!*				*†Also available with a 2GB hard disk*

APS MO DRIVES

Model	Capacity/Features	Awards	SR2000
APS 230MB MO Olympus mechanism	4500 rpm drive	MacUser ZD LABS	$449.95
APS 1.3GB MO Sony SMO F-531 mechanism	4MB cache		1699.95
OPTICAL JUKEBOX, SINGLE DRIVE Sony mechanism	Up to 26GB of ultra-reliable MO storage/includes software		5999.95

APS QIC & DAT TAPE BACKUP SYSTEMS

Model	Capacity/Features	Awards	Internal	SR2000
APS HyperQIC™ QIC 3080 Mechanism	**2GB**	MacWEEK MacUser ZD LABS	N/A	$499.95
APS DAT DDS-1 Non-Compression Mech.	**2GB** Back Again by popular demand!		$649.95	699.95
APS HyperDAT DDS-2 Compression Mechanism	**8GB**		849.95	899.95
APS HyperDAT Pro DDS-2 High-Speed Mechanism	**8GB**	POWER MATCHED FOR POWER PC	1049.95	1099.95
APS DATLoader600 Ideal for large unattended network backups	**48GB**		N/A	2699.95

APS MEDIA SALE

SONY.	SALE PRICE	SyQuest®	SALE PRICE
SONY 60M DAT TAPE	$6.95	SQ-400 (44MB)	$39.95
SONY 90M DAT TAPE	7.95	SQ-800 (88MB)	49.95
3080 XLF 3-PACK	89.95	SQ-2000 (200MB)	79.95
128MB MO CARTRIDGE	22.95	SQ-310 (105MB)	54.95
230MB MO CARTRIDGE	32.95	SQ-327 (270MB)	59.95
1.3GB MO CARTRIDGE	82.95		

- 30-day money-back guarantee on all APS brand products. Your risk is the cost of shipping.
- Drive-for-Drive Repair or Replacement Warranty. APS will, at its discretion, replace or repair products found to be defective according to the terms of the product's warranty.
- Refused orders subject to 20% restocking fee.
- Listed capacities are formatted
- Internal hard drives include brackets, cables, cords and LEDs required for operation with the specified Macintosh where applicable. External SCSI-2 drives come with a premium SCSI cable, power cord and user guide.
- Actual data compression and tape capacity vary greatly depending on the type of data recorded, other system parameters and environment.
- All hard drives from APS Technologies come preformatted with Apple's System 7.0.1 software, and APS Technologies' APS PowerTools SCSI formatter/hard disk partitioner. You may need to install system software appropriate to your machine before use.
- Prices and specifications are subject to change without notice. Not responsible for typographical errors.
- Copyright © 1996 APS Technologies

APS DLT TAPE BACKUP SYSTEMS

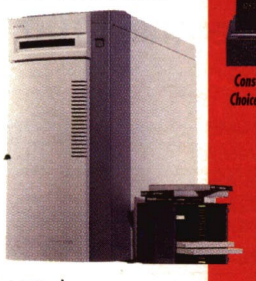
Model	Capacity/Features	Awards	SR2000
APS DLT30 Digital Linear Tape Mechanism	**30GB**	POWER MATCHED FOR POWER PC MACUSER EDITORS' CHOICE AWARD 1995 FINALIST	$3999.95
APS DLT40 Digital Linear Tape Mechanism	**40GB**	POWER MATCHED FOR POWER PC	5499.95
APS DLT4500 Loader Digital Linear Tape Mechanism	**200GB**		9999.95
APS DLT4700 Loader Digital Linear Tape Mechanism	**280GB**		11499.95

All APS tape drives include Retrospect® by Dantz®

Fuji DLT III (TK 85) Media	**Special** $45.95
Fuji DLT IV (TK 88) Media	**Special** $109.95

26GB ULTRA-RELIABLE MO STORAGE!

OPTICAL JUKEBOX



- ✔ Get up to 26GB of ultra-reliable MO storage
- ✔ Great for mission-critical environments
- ✔ Huge 4MB cache buffer

$5999.95 *Single drive configuration*

To receive an automated fax listing of all APS documents, call 800-374-5802 from any touch-tone telephone

Then call 816-920-4150 from a fax machine with a handset or fax modem and follow the instructions.

VISA MasterCard DISCOVER NOVUS AMERICAN EXPRESS TeleCheck

Visit our Web Page at http://www.apstech.com/
APS Sales (816) 290-4109

CALL TODAY!

800-677-3294

APS Technologies

REF. CODE: 307012

FREE → SHIPPING FOR YOUR FIRST WEB SITE ORDER! (UP TO 10 lbs)

The LLB Company, Inc.

1-800-848-8967

International: 206.746.0229 WEB SITE: HTTP://llb.com Fax: 206.746.5168

MEMORY

Standard 30-pin SIMMs

1MB 100/80/70NS	$31/32/35
2MB 80/70NS	58/74
4MB 80/70NS	102/105
8MB 70NS	270
16MB 70NS	455

30-pin, 36 bit PC SIMMS

1MB 70NS	$45
4MB 70NS	149

72-pin SIMMs

4MB 70/60NS	$88/94
8MB 70/60NS	178/199
16MB 70/60NS	365/367
32MB 60NS	771

72-pin, 36 bit PC SIMMS

4MB 70NS	$147
8MB 70NS	339
16MB 70NS	475
32MB 70NS	979

8MB 72PIN $178

PB 5300 Series

8MB/12MB RAM	$284/469
16MB/32MB RAM	538/1035

PB 190 Series

4MB/8MB 70NS	$203/334
12MB/16MB 70NS	512/599
32MB70NS	1219

PB500 Series

4MB/8MB RAM	$148/268
16MB/32MB RAM	545/1089

4MB PAL SIMMs for II,IIx

4MB 80/70NS	$129/129

64-pin SIMMs for IIfx

1MB 80/70NS	$43/43
4MB 80/70NS	155/155
8MB 70NS	349
16MB 70NS	515

168-pin DIMMs

4MB 60NS	$125
8MB 60NS	199
16MB 60NS	362
32MB 60NS	762
64MB 60NS	1560

PBDUO 210/230 Series

PB DUO-4MB	$169
PB DUO-8MB	299
PB DUO-12MB	479
PB DUO-14MB	549
PB DUO-20MB	698
PB DUO-28MB	1172

What type of Memory do I need?

Standard 30-Pin Simms:
Plus, SE, SE 30, Classic, Classic II, Color Classic, LC, LCII, Performa 200, Performa 400-430, Performa 600, Quadra 900/950, Mac II, IIx, IIcx, IIsi, IIci, IIfx, IIvx, IIvi.

Standard 72-Pin Simms:
Quadra 605/630, 610, 650, 700, 800/840AV, LCIII, LC475, LC630, Performa 450-560, 575 and 6115CD, PowerMac 6100, 7100, 8100, WS 80, WS60, WS 95, WS 6150 and WS 8150, 9150.

168 Pin Dimms:
PowerMac 9500, 8500, 7500, 7200

PowerMac Memory Selection Guide

PowerMac 6100

(8MB) Standard 72-pin SIMMS

To upgrade your RAM to:	You need to order:
16MB	(2) 4MB 70/60NS
24MB	(2) 8MB 70/60NS
40MB	(2) 16MB 70/60NS
72MB	(2) 32MB 60NS

PowerMac 7100, 8100

(8MB) Standard 72-pin SIMMS

To upgrade your RAM to:	You need to order:
16MB	(2) 4MB 70/60NS
24MB	(2) 8MB 70/60NS
40MB	(2) 16MB 70/60NS
72MB	(2) 32MB 60NS
136MB	(4) 32MB 60NS
264MB *(7100 only)*	(8) 32MB 60NS

PowerMac 9500, 8500, 7500

(16MB) Standard 168-pin DIMMS

To upgrade your RAM to:	You need to order:
32MB	(2) 8MB 70NS DIMMS
48MB	(2) 16MB 70NS DIMMS
80MB	(2) 32MB 70NS DIMMS
144MB	(2) 64MB 70NS DIMMS

PowerMac 7200

(8MB) Standard 168-pin DIMMS

To upgrade your RAM to:	You need to order:
24MB	(2) 8MB 70NS DIMMS
64MB	(2) 16MB 70NS DIMMS
128MB	(4) 32MB 70NS DIMMS
256MB	(4) 64MB 70NS DIMMS

FPUs/CoProcessors Video RAM

FPU's/Math CoProcessors

Centris FPU 25MHz	$189
FPU 33MHZ DUO/P600	52
FPU Color Classic 16MHZ	44
FPU LCIII 25 MHZ	49
FPU LC/LCII 16 MHZ	49
LC575 33MHZ Math CoProc.	285

VRAM/CACHE

256K 80NS Video RAM	$17
512K Video RAM	22
1MB Video RAM PM72/75/8500	55
2MB Video RAM PM 9500	229
256K/512K Cache Card	72/411
1MB Cache Card	792
256K Cache Dimm PMPCI256	109
512K Cache Dimm PMPCI512	185

MODEMS

Global Village

Teleport Platinum 28.8 V.34	$205
PowerPort 1XX Platinum 28.8 V.34	339
PowerPort Gold PC Card 14.4	180
PowerPort Platinum PC Card 28.8	349
PowerPort Platinum PRO PC Card	519

SUPRA

SUPRA Simple Internet 28.8 Ext.	$189
SUPRA 28.8 V.34	229
SUPRA 28.8 PB FAX Modem	189
SUPRA EXPRESS 144 PLUS	99
SUPRA EXPRESS 288 External V.34	159

US ROBOTICS

28.8 Sportster V.34 Internet Bundle	$212
Sportster14,400 Mac & Fax	119
28.8 V.34 PCMCIA Sportster	291

TDK

28.8 V.34 PCMCIA PB190/5300	$259
Global Class 288 V.34 PCMCIA	355

Motorola

Lifestyle 28.8 V.34	$212
Power 28.8 V.34	270
ISDN Bitsurfer	279

MEGAHERTZ

Cruise Card 14.4 PCI	$135
Cruise Card 28.8	295
Cruise Card 14.4	159

ACCELERATORS

DAYSTAR DIGITAL

PowerPro 601 100MHZ $1240

Turbo 040 40MHZ w/cache	$679
Turbo 040i 33MHZ w/cache no FPU	609
PowerPro 601 100MHZ w/cache	1240
Turbo 601 100 MHZ w/adapter	1175
PowerCard 601 100MHZ	959

SONNET

Quad Doubler 40MHZ Centris610	235
Quad Doubler 40MHZ w/FPU Centris 610	345
Quad Doubler 50MHZ w/FPU Quadra 610	390
Quad Doubler 50MHZ w/FPU Centris 650	390
Quad Doubler 50 MHZ Centris 660AV/7/900	390

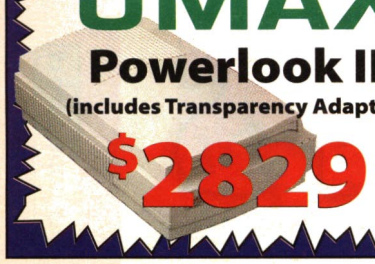
CD-ROM

Accessories		Monopoly/Virgin	42
Mark I Flight Cont.Sys	95	Myst	49
Mark I Weapons Cont.Sys	69	Power Pete	27
Rudder Cont. Sys.	105	Phantasmagoria	59
Entertainment		Rebel Assault II	50
Battle Beast	29	Triple A Pak	40
Dark Forces	49	Warcraft 1.0	48
Descent	50	***Miscellaneous***	
Dust	39	Soft Windows 2.0	299
F/A-18 Hornet 2.0	49	Quicken 6.0 Deluxe	65
Full Throttle	49	***COREL PHOTO CD'S***	
Havoc	39	***BUY 4 - GET 1 FREE!***	
Marathon II	45		

UMAX®

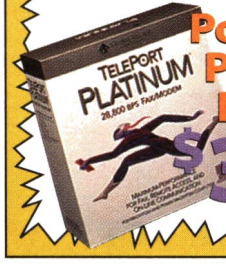
Powerlook II

(includes Transparency Adapter)



$2829

GLOBAL VILLAGE



PowerPort Platinum PC Card

$349

SyQuest®

EZ135 Drive

$224

Single Cart.	$19.50
Five-Pack	$96.25
Ten-Pack	$190.00

SONY®

CD-R and Opticals

Buy 5, get 1 free!

Includes 3.5" and 5.25" Opticals and Recordable Cd's

FREE CATALOG! 1.800.848.8967

Electronic orders: Compuserve @ 73423.1272 @Compuserve.com

- P.O.'s accepted upon approval
- All major credit cards accepted - No surcharge - when shipped
- Prices subject to change, not responsible for errors
- We export to most countries in the world
- Orders received before 8:00 pm EST weekdays shipped same day
- Open 6am to 7pm M-F. 9am to 4pm Saturdays
- Returns subject to a 15% restocking fee

E-Mail us!

The LLB Company, Inc. 13228 NE 20th St., Suite B, Bellevue, WA 98005

WK031896

AIRBORNE EXPRESS OVERNIGHT $7.00 up to 10lbs

DRIVES

APPLE
1080MB 409
850MB 339
2GIG 925

QUANTUM (EXTERNAL)
1080 Ext. Fireball $345
850MB Ext. Trailblazer .. 279
Capella 2.2 GB 759
GrandPrix 4.2 GB 8.6 MS .1049

Rumi
200MB SyQuest w/Cart $479
270MB SyQuest w/Cart 479

NEC
6XE Multi-Spin CD-ROM Drive $519
4XC 7CD Changer 369

FWB incorporated
2X CD Recorder/Writer $1485
4X CD Recorder/Writer 3035

SyQuest EZ135 W/Cartridge $224

Iomega
Iomega Zip Drive $199
Jaz 1.0GB Drive 605

PINNACLE MICRO THE OPTICAL STORAGE COMPANY
RCD1000 w/10 Recordable CD's $1295
RCD5020 Ext. CD Recorder 1265
APEX 4.6GB Optical Drive 1589

MONITORS

APPLE
AV1710 .. APPLE VISION 17" $959
AV1710AV APPLE VISION 1710 AV 26MM . 1,069
MS1705 .. MULTISCAN 17" 28MM 759
MS20 .... MULTISCAN 20" 1,989

SONY
15SF ..... SONY 15" SFZ MULTISCAN 539
17SE1 .... SONY 17" 17SE1 1,150
17SF ..... SONY 17" MULTISCAN 939

NEC
XE15 ..... MULTISYNC XE15 15" $620
XE17 ..... MULTISYNC XE17 17" 1,099
XE21 ..... MULTISYNC XE21 21" 1,845
XP17 ..... MULTISYNC XPI7 17" 1,135
XP21 ..... MULTISYNC XP21 21" 2,140
XV15 ..... MULTISYNC XV15 15" 499
XV17 ..... MULTISYNC XV17 17" 829

radius
PressView 21SR $3,469
PressView 17SR 2,122
PrecisionView 21 2,415
PrecisionView 17 1,043

MEDIA

CDR 10 PK $73

SONY
Magneto Optical Disks
5.25" MO 1.3GB 1024k b/s / 1.2GB 512k b/s $60
5.25" MO 650MB 1024k b/s / 594MB 512k b/s 55
3.5" MO 230MB/Mac Formatted 28/30
3.5" MO 128MB/Mac Formatted 24/26
SONY CD-Recordable
74 Min 4x 650MB-10 Pack $73
74 Min 4x 650MB 8

Verbatim - *Call for the full line of Verbatim products*
DataLife 4mm/8mm Data Cartridges
8mm, DL 112 Meters 2.5/5.0GB $7
4mm, DL 60 Meters DDS-MRS 1.3GB 7.50
4mm, DL 90 Meters DDS-MRS 2.0GB 9.50

Iomega ZIP Cartridge 100MB $19
- 3pack/10 Pack 49.50/139
Iomega Jaz 1GB Cartridge/5 Pack 123/490
Iomega Jaz 540MB Cartridge/5 Pack ... 69/294

SyQuest EZ135 ..... $19.50
- 5 Pack 96.25
- 10 Pack 190.00

The Original SyQuest Cartridge

	1-4	5-9	10+
44MB 5.25"	$42	$41	$40
88MB 5.25"	$48	$47	$46
200MB 5.25"	$76		$74.75
270MB 3.5"	$59	$58	$57
105MB 3.5"	$55		$54

ACCESSORIES

ADESSO
KEYBOARD W/TRACKBALL $89
PRO POINT EXT KEYBOARD 89
SOFT TOUCH+ EXT. KEYBOARD 49
TRU-FORM EXT. KEYBOARD 89
TRUFORM EXT. KEYBOARD W/PNTR 100
POWERMOUSE 35
POWERMOUSE DELUXE PREMIUM PK 45

WACOM
4X5 ARTPAD II ADB W/ERASER 139
ARTZ II 6X8 GRAPHICS TABLET 315
ARTZ II 12X12 GRAPHICS TABLET 439
ARTZ II 12X18 GRAPHICS TABLET 705
ARTZ II 12X18 ELECST. TABLET 885
ARTZ II 18X25 GRAPHICS TABLET 1985

PRINTERS

APPLE
Color Laserwriter 12/600 ..... $6465
Laserwriter 4/600 895
Personal Laserwriter 320 809

HEWLETT PACKARD
HP LaserJet 5L $515
HP LaserJet 5P Plus 888
HP LaserJet 5si 2860
HP DeskWriter 660C 399
We also carry HP and Apple Printer supplies

EPSON
STYLUS COLOR II PRINTER $409
STYLUS COLOR PRO XL PRINTER 1795

SCANNERS

EPSON 1200C PRO $1202
VISIONEER PaperPortVX for Mac 365
Nikon ELECTRONIC IMAGING CoolScan External 1379
Super CoolScan 1999
AGFA StudioScan IISI 865
ARCUS II 1941
POLAROID SPRINTSCAN 1555

UMAX
POWERLOOK I I (includes Transparency Adapter) $2829
VISTA S-12 PRO+ 908
VISTA S-12 LE+ 808
VISTA S-6 PRO+/ LE+ 698

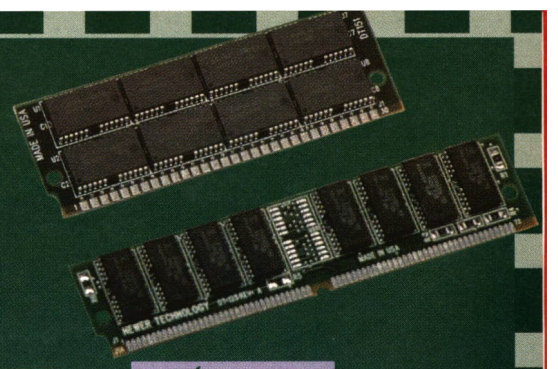
QUANTUM
Internal Drives

850MB INT. TRAILBLAZER . 219
1080 INT. FIREBALL $289
2.1GB INT. DRIVE 789
4.3GB ATLAS - INT. 1,215

POWERBOOK ACCESSORIES

VST PB190/5300 BTRY NIMH 169
VST PB190/5300 BTRY/CHRGER 5000 .. 309
VST PB5300 POWER ADAPTER AC/DC 229
SUPERCHARGER PB5300 95
MINI AC ADAPTER PB5300 69
APPLE AC ADAPTER PB 5300 59

NEWER HABITAT



NUPOWR

Newer TECHNOLOGY

POWER PC UPGRADE FOR PB500!

PB 500 117MHZ 0MB $615
PB 500 117MHZ 4MB 799
PB 500 117MHZ 8MB 989

PC CARD

PC CARD DRIVE $322
PC CARD DRIVE/MICRODOCK BUNDLE .. 524
PC CARD 10MB FLASH MEMORY 392
PC CARD 20 MB FLASH MEMORY 827
PC CARD 2MB FLASH MEMORY 130
PC CARD 28.8 FAX MODEM 340

MEMORY

8MB 72PIN 70NS SIMM $275

4MB 64 BIT 70NS DIMM . . . $187
8MB 64BIT 70NS DIMM. . . . 259
16MB 64 BIT 70NS DIMM . . 489
32MB 64BIT 70NS SIMM 1,025
64MB 64BIT 70NS DIMM 2,069

MICRODOCK

NEWER 16SC ULTRADOCK $422
NEWER 16SCE ULTRADOCK W/ENET 499
COLOR MICRODOCK 242
ETHERNET MICRODOCK 173
FLOPPY MICRODOCK 92
PC CARD MICRODOCK 224
SCSI MICRODOCK 138
FLOPPY DRIVE 119
FLOPPY DRIVE/MICRODOCK BUNDLE ... 199

VRAM/CACHE

POWERCLIP/256K CACHE BUNDLE $208

POWERMAC 1MB CACHE .. $785
POWERMAC 512K CACHE ... 340
POWERMAC CACHE 141
CACHE 256K DIMM 176
1MB VRAM 7200/7500/8500 92
2MB VRAM 9500 229

For all your quality Newer Technology products, call Newer Habitat

1.800.840.2212

FAX: 206.746.5168

WK031896

DIRECTTech SYSTEMS INC.

CALL: 1-800-279-5520

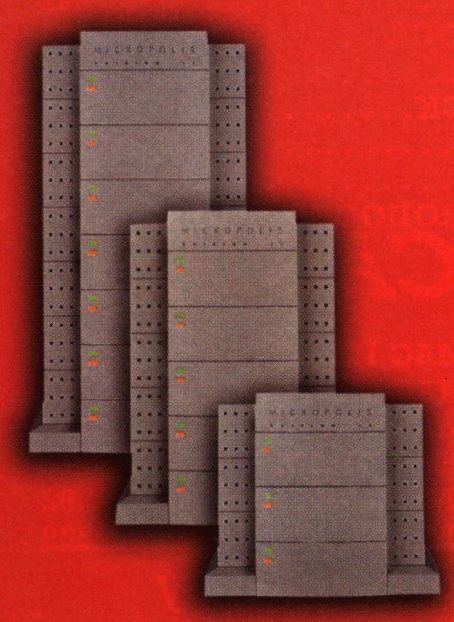
YOUR #1 SOURCE FOR STORAGE

CALL FOR LATEST PRICES!

THE (STACKABLE) PHASER LINE OF ENCLOSURES, FEATURING ACTIVE TERMINATION

THE DIRECTTECH ADVANTAGE!

All Phaser-I Enclosures feature ACTIVE Termination, the latest in termination technology. Put an end to your SCSI headaches. DIRECTTECH'S active termination monitors and regulates your SCSI chain and eliminates any termination problems.



MICROPOLIS MICRODISK LT & LS

THE STACKABLE, REMOVABLE DRIVE SUBSYSTEM

Model #	Capacity
MDLT2100/AV	2.1 GB
MDLT4300/AV	4.3GB
MDLS9100/AV	9.1GB

NOW AVAILABLE IN FAST/WIDE CONFIGURATION.
ASK ABOUT THE MICRODISK RAID 5 ARRAY!

CALL FOR LATEST PRICING AND CONFIGURATION.

HARD DRIVES

ALL DRIVES ARE PREFORMATTED, TESTED AND PACKAGED WITH SCSI MANAGER 4.3 COMPATIBLE DRIVERS. EXTERNAL DRIVES INCLUDE CHOICE OF 25-50 OR 50-50 PIN CABLE.

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
420 MB	DT-420TB	Quantum	11ms	2 yrs	$150	$225
850 MB	DT-850TB	Quantum	11 ms	2 yrs	$199	$275
1.05GB	DT-51080	Seagate NEW PRODUCT!	10ms	3 yrs	$269	$350
1.0 GB	DT-1080FB	Quantum	11ms	3 yrs	$269	$350
1.05 GB	DT-31230	Seagate NEW LOW PRICE!	9.0 ms	5 yrs	$380	$455
2.0 GB	DT-4221	Micropolis NEW LOW PRICE!	8.0 ms	5 yrs	$595	$670
2.0 GB	DT-2490	Hewlett Packard	9.0 ms	5 yrs	$850	$950
2.1 GB	DT-32550	Seagate Barracuda II NEW LOW PRICE!	8.0 ms	5 yrs	$720	$795
4.3 GB	DT-3243	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$995	$1,075
4.3 GB	DT-15150	Seagate Barracuda NEW LOW PRICE!	8.0 ms	5 yrs	$1,175	$1,250
4.3 GB	DT-4280	Quantum	8.0 ms	5 yrs	$1,025	$1,100
9.0 GB	DT-1991	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$1,950	$2,050
9.0 GB	DT-410800	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$1,995	$2,095

AUDIO/VIDEO TUNED DRIVES

DIRECTTECH SYSTEMS IS AN AUTHORIZED A/V PARTNER WITH SEAGATE AND MICROPOLIS.

Capacity	Model No.	Mechanism	Seek	Warranty	Internal	PHASER-I
1.05 GB	DT-31230AV	Seagate	9 ms	5 yrs	$380	$455
2.0 GB	DT-4221AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$650	$725
2.1 GB	DT-32550AV	Seagate Barracuda	8.0 ms	5 yrs	$720	$795
4.3 GB	DT-3243AV	Micropolis NEW LOW PRICE!	8.5 ms	5 yrs	$1,050	$1,125
4.3 GB	DT-15150AV	Seagate Barracuda	8.0 ms	5 yrs	$1,175	$1,250
9.0 GB	DT-1991AV	Micropolis NEW LOW PRICE!	12 ms	5 yrs	$2,050	$2,150
9.0 GB	DT-410800AV	Seagate Elite 9 NEW LOW PRICE!	11 ms	5 yrs	$1,995	$2,0955

FAST/WIDE SCSI DRIVES

MOST EFFECTIVE WHEN COMBINED WITH A FAST/WIDE ATTO BOARD. CALL FOR SPECIAL CONFIGURATIONS!

Capacity	Model No.	Mechanism	Warranty	Internal	PHASER-I
2.1 GB	DT-32550W	Seagate Barracuda 2LP Wide	5 yrs	$785	$885
2.1 GB	DT-4221W	Micropolis 4221Wide	5 yrs	$650	$750
4.3 GB	DT-15150W	Seagate Barracuda 4 Wide	5 yrs	$1,225	$1,325
4.3 GB	DT-3243W	Micropolis 3243Wide	5 yrs	$1,050	$1,150
9.0 GB	DT-1991W	Micropolis 1991Wide	5 yrs	$2,099	$CALL
9.0 GB	DT-1991AVW	Micropolis 1991AVWide	5 yrs	$2,,150	$CALL
9.0 GB	DT-410800W	Seagate Elite 9 Wide	5 yrs	$2050	$CALL

DISK ARRAYS/RAID

MEDIA 100 * RADIUS * DIGITAL VIDEO * TARGA 2000
ARRAYS INCLUDE - ATTO CARD, REMUS & 2 FAST/WIDE DRIVES

Capacity	Model No.	Mechanism	Seek	Warranty	EXTERNAL
4.0 GB	DT-32550W-2	Seagate - Fast/Wide Barracuda 2LP (2)	4.0 ms	5 yrs	$CALL
8.0 GB	DT-3243WAV	Micropolis - Fast/Wide 3243AV (2)	4.0 ms	5 yrs	$CALL
18.0 GB	DT-1991WAV	Micropolis - Fast/Wide 1991AV (2)	4.0 ms	5 yrs	$CALL

CALL FOR MORE INFORMATION ON DIRECTTECH DISK ARRAYS!

ATTO Silicon Express IV	Nubus Fast/Wide Accelerator	$CALL
ATTO Express PCI	Dual Channel - PCI -Fast/Wide	$CALL
ATTO Express PCI	Single Channel - PCI-Fast/Wide	$CALL

SYQUEST

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Internal	PHASER-I
88 MB	SQ5110C	$305	$365
200 MB	SQ5200	$420	$480
270 MB	SQ3270	$420	$470

CD ROM RECORDABLE

JVC Personal Archiver (2X)	$1,165
JVC Personal Archiver (4X)	$2,499

JVC External CD Recorders include cables, terminator, 2 Blank CD's and Software.

NEW JVC PRICING

TAPE

INCLUDES A FREE COPY OF RETROSPECT AND ONE TAPE

Capacity	Model No.	Format	PHASER-I
2 GB	HP-35470	4mm	$950
4-8 GB	Sony-5000	DDS-2	$999
4-8 GB	HP-1533A	DDS-2	$1,299
5-10 GB	Exabyte-8505	8mm	$2,150
15-30 GB	DLT-2000XT	DLT	$4,399

OPTICAL

INCLUDES ANUBIS FORMATTING SOFTWARE AND ONE CARTRIDGE

Capacity	Model No.	Seek	PHASER-I
230 mb	Fujitsu	30 ms	$675
1.3 GB	HP-C1716	23 ms	$2,099
1.3 GB	Maxoptix T-III	18 ms	$2,199

MEDIA

Type	Price
Syquest 44	$40
Syquest 88	$46
Syquest 105	$54
Syquest 200	$76
Syquest 270	$60
Optical 128 MB	$22
Optical 230 MB	$30
Optical 1.0 GB	$100
Optical 1.3 GB	$90

CALL FOR QUANTITY PRICING!

MICROPOLIS
Seagate
HEWLETT PACKARD
Quantum
SyQuest
JVC

ASK YOUR SALES REP ABOUT DIRECTTECH'S NEW WARP POLICY. (WARRANTY ADVANCED REPLACEMENT PROGRAM)

VISA MasterCard AMERICAN EXPRESS

No charge for Visa, Mastercard or Amex

Government, Corporate, and University P.O.s Welcome!

- 30-day money-back guarantee on all drives.
- Refused orders subject to restocking fee.
- RMA No. required for all returns.

Prices, terms, and availability are subject to change without notice.

All tradenames and trademarks are the property of their respective companies.

INTERNATIONAL ORDERS CALL:
PHONE: (612) 941-2616
FAX ORDERS: (612) 942-0430

DirectTech Systems, Inc. 7625 Golden Triangle Drive, Suite R Eden Prairie, MN 55344

Mac Xtra Discounts

CALL FOR OUR FREE CATALOG!

1-800-553-4230

MAC Xtra DISCOUNTS

FAX your order!
206-746-5324

International:
206-746-3803

MEDIA

SYQUEST
EZ135MB SYQUEST CARTRIDGE $19
EZ135MB SYQUEST CART. -10 PK. $180
44MB SYQUEST CARTRIDGE 40
88MB SYQUEST CARTRIDGE 45
105MB SYQUEST CARTRIDGE 52
200MB SYQUEST CARTRIDGE 73
270MB SYQUEST CARTRIDGE 56
VERBATIM
3.5" 128MB OPTICAL 21
3.5" 230 MB OPTICAL 28
RECORDABLE CDROM 74MIN/640MB 8
RECORDABLE CDROM 74MIN/640MB-10 PK. 73
VERBATIM 2SDD 3 1/2 10PK DISK 7.50
VERBATIM 4MM/60M DATA CART 7
VERBATIM DATA 4MM DC 295 FT 9
VERBATIM DATA 8MM DC 367 FT 7
VERBATIM DC 2120 120MB QIC80 ..... 12.50
VERBATIM EP-S HIGH YIELD TONER 60
VERBATIM EP-N TONER CART 89
VERBATIM EP-L TONER CART 59
VERBATIM ANTI-GLARE FILTER 14/15" 33
IOMEGA ZIP
ZIP 100 MB CARTRIDGE 19.50
ZIP 100 MB CARTRIDGE - 10- PACK 139
ZIP 100 MB CARTRIDGE - 3- PACK 45
IOMEGA JAZ
JAZ 1GB CARTRIDGE 123
JAZ 1GB CARTRIDGE - 5 PACK 490
JAZ 540MB CARTRIDGE 69
JAZ 540MB CARTRIDGE - 5 PACK 294
TDK AUDIO PRODUCTS
120 MIN. HIGH STANDARD 2.50
120 MIN. EXTRA HIGH 3.25
120 MIN. HI-FI GRADE 3.50
120 MIN. SUPER-VHS 6.90
30 MIN. EXTRA HIGH VHS-C 3.99
120 MIN. 8 MM HIGH STANDARD 4.25
120 MIN. 8 MM EXTRA HIGH 4.75
120 MIN. HI-8 METAL EVAPORATE 13.99
SONY BATTERIES
D2 PACK 2.99
C2 PACK 2.99
AA 2 PACK 2.49
120 MIN HIGH GRADE / 4 PK 5.90/20
120 MIN HI-8 METAL PART/4 PK..... 8.99/34
SONY VHS TAPES
120 MINUTE $3.00
120 MINUTE 4 PACK $11
160 MINUTE $3.50
120 MINUTE SUPER 8.50
160 MINUTE SUPER 10
SONY CD-RECORDABLE
RECORDABLE CDROM 74MIN/640MB 8
RECORDABLE CDROM 74MIN/640MB-10 PK. 73
SONY BETA TAPES (LIMITED AVAILABILITY!)
500 / 750 METER LGTH ..... 3.50 / 3.50
750 METER LGTH HIGH GRADE 4.00
500 METER LGTH METAL 15.99
CABLES
POWERBOOK TO HARD DRIVE CABLE..... 37
MODEM CABLE 6'PLUS/SE/II 7
SCSI CABLE M50-50 6' CABLE 19
SCSI M50-M50 18 CABLE 9
SCSI TERMINATOR 15

MODEMS

GLOBAL VILLAGE
TELEPORT PLATINUM 28.8 V.34 ..... $203
POWERPORT 1XX PLATINUM 28.8 V.34 ... 337
POWERPORT PLATINUM PC CARD 28.8 .. 349
POWERPORT PLATINUM PC CARD PRO .. 519
US ROBOTICS
US ROBOTICS 28.8 V.34 INTERNET BUNDLE209
US ROBOTICS 14.4 EXT 117
ZOOM
ZOOM 2400 BPS MODEM 65
ZOOM V.FAST 28.8 189
ZOOM VFX 14.4 V.32BIS S/R FAX 169
ZOOM VFXV 14.4 V.32BIS W/VOICE 148
ZOOM 14.4 EXTERNAL S/R V.42 79
SUPRA
SUPRAEXPRESS 28.8 EXT V.34 159
SUPRA 14.4 EXPRESS 98
SUPRA 28.8 PB FAX/MODEM 187
SUPRA 28.8 V.34 S/R FAX MODEM 222

MONITORS/VIDEO

MONITORS
SUPERMATCH PRESSVIEW 21T $3249
SUPERMATCH 21TXL 2245
RADIUS PRECISION VIEW 17" 1005
PRECISION COLOR PIVOT 875
PRECISIONCOLOR 17 RADIUS 1095
INTELLICOLOR 20E 2189
NEC MULTISYNC XV14/15/17 .. 349/479/839
NEC MULTISYNC XE15/17/21 . 599/1099/1969
NEC MULTISYNC XP17/21 ..... 1149/2379
VIDEO
PRECISIONCOLOR PRO 24X NUBUS 1165
PRECISIONCOLOR PRO 24XK NUBUS 825
THUNDER IV GX-1360 RADIUS 1875
THUNDER IV GX-1152 RADIUS 1635
THUNDER IV GX-1600 RADIUS 2040
RADIUS THUNDER 24 GT 490
SPIGOT POWER AV 820

ACCELERATORS

DAYSTAR
POWERPRO 601 80MHZ W/RAM CACHE $1441
POWERPRO 601 100MHZ W/CACHE 1231
TURBO 040 40MHZ W/CACHE 679
TURBO 040I 33MHZ W/CACHE NO FPU .. 605
TURBO 601 66MHZ FOR IICI, IISI W/ADPT . 851
TURBO 601 66MHZ IIVX, IIVI, P600 851
TURBO 601 100MHZ FOR IICI, IISI W/ADPT1165
TURBO 601 100MHZ IIVX, IIVI, P600 1165
POWERCARD 601 100MHZ - *NEW!* 946
SONNET TECHNOLOGY
QUAD DOUBLER 40MHZ
CENTRIS 610 233
QUAD DOUBLER 40MHZ W/FPU
CENTRIS 610 339
QUAD DOUBLER 50MHZ W/FPU
QUADRA 610 387
QUAD DOUBLER 50MHZ W/FPU
CENTRIS 650 387
QUAD DOUBLER 50 MHZ
CENTRIS 660AV/7/900 387
BUDGET BOOSTER 25MHZ
MAC LC 94
PRESTO 040 LC 50/25MHZ
MAC LC/LC II/PERF. 400,405,410,430 . 193
PRESTO 040 LC 50/25MHZ W/FPU
MAC LC/LC II/PERF. 400,405,410,430 . 290
PRESTO 040 80/40MHZ
MAC IICI 290
PRESTO 040 80/40MHZ W/CACHE
MAC IICI 387
PRESTO 040 80/40MHZ W/FPU
MAC IICI 398
PRESTO 040 80/40MHZ W/CACHE, FPU
MAC IICI 485

What type of Memory do I need?

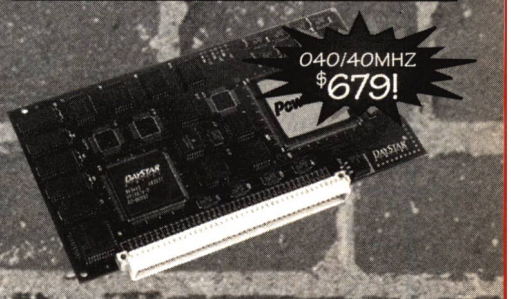
Standard 30-Pin Simms:
Plus, SE, SE 30, Classic/II/Color, LC,/LCII, Perf. 200/400-430/600, Q 900/950, Mac II, IIx, IIcx, IIsi, IIci, IIfx, IIvx, IIvi.

Standard 72-Pin Simms:
Q 605/630, 610, 650, 700, 800/840AV, LCIII/475/630, Perf. 450-560/575 and 6115CD, PMac 61/71/8100, WS 80, WS60, WS 95, WS 6150 and WS 81/ 9150.

168 Pin Dimms:
PowerMac 9500, 8500, 7500, 7200

DRIVES

APPLE EXTERNAL DRIVES
APPLE 850MB $339
APPLE 1.0GB 409
APPLE 2.0GB 925
QUANTUM DRIVES
Q1080 EXTERNAL FIREBALL $345
Q540MB EXTERNAL FIREBALL 259
Q850MB EXTERNAL TRAILBLAZER 279
Q CAPELLA 2.2GB 759
Q GRAND PRIX 4.2GB 8.6MN 1049
SYQUEST
SYQUEST EZ135 W/CARTRIDGE $225
EZ135MB CARTRIDGE 19.50
IOMEGA DRIVES
ZIP DRIVE/100MB ZIP CARTRIDGE .. $199/19
JAZ 1.0GB DRIVE/1.0GB CARTRIDGE . 605/123
FWB
2X CD RECORDER/WRITER $1475
4X CD RECORDER/WRITER 3015
NEC
6XE MULTI-SPIN CD-ROM DRIVE $515
RUMI SYQUEST
RUMI 88MB SYQUEST W/CART $369
RUMI 105MB SYQUEST W/CART 314
RUMI 200MB SYQUEST W/ CART 479
RUMI 270MB SYQUEST W/CART 479
PINNACLE
APEX 4.6GB OPTICAL DRIVE $1575
RCD 1000 W/10 RECORDABLE CD'S 1295
RCD 5040 1250



MEMORY

STANDARD 30-PIN SIMMS
1MB 100NS $30
1MB 80/70NS 31/33
2MB 80/70NS 57/73
4MB 80/70NS 101/103
8MB 70NS 270
16MB 70NS 455
30-PIN , 36 BIT PC SIMMS
1MB 70NS $42
4MB 70NS 155
4MB PAL SIMMS FOR II,IIX
4MB 80/70NS $128/128
64-pin SIMMs for IIfx
1MB 80/70NS $38/38
4MB 80/70NS 152/154
8MB 70NS 280
16MB 70NS 515
72-PIN SIMMS
4MB 70/60NS $87/93
8MB 70/60NS 176/198
16MB 70/60NS 365/367
32MB 60NS 771
72-PIN, 36 BIT PC SIMMS
4MB 70NS $147
8MB 70NS 337
16MB 70NS 475
32MB 70NS 977
168-PIN DIMMS
4MB 60NS $124
8MB 60NS 198
16MB 60NS 361
32MB 60NS 760
64MB 60NS 1550
PB 5300 SERIES
8MB RAM 283
12MB RAM 543
16MB RAM 536
32MB RAM 1035
PB 190 SERIES
4MB 70NS $203
8MB 70NS 304
12MB 70NS 507
16MB 70NS 599
32MB70NS 1199
PB500 SERIES
4MB RAM $146
8MB RAM 267
16MB RAM 543
32MB RAM 1089
PBDUO 210/230 SERIES
PB DUO-4MB $165
PB DUO-8MB 297
PB DUO-12MB 473
PB DUO-14MB 543
PB DUO-20MB 777
PB DUO-28MB 1161
FPU'S/MATH COPROCESSOR/VRAM/CACHE
CENTRIS FPU 25MHZ $186
FPU 33MHZ DUO/P600 51
FPU COL. CLASSIC 16MHZ 49
LC575 33MHZ MTH COPROC 238
POWERMAC 6100, 7100, 8100 VRAM/CACHE
256K 80NS VIDEO RAM $17
512K VIDEO RAM 22
256K CACHE PM 6100, 7100 70
512K CACHE PM 6100, 7100 279
1MB CACHE PM 6100, 7100 789
POWERMAC 72/75/85/9500 VRAM/CACHE
1MB VRAM 7200/7500/8500 55
2MB VIDEO RAM PM9500 227
256K CACHE DIMM 125
512K CACHE DIMM 185
POWERBOOK BATTERIES
PB 100 BATTERY/CHARGER 44/111
PB 140-180C BATTERY 57

NETWORKING

FARALLON
ETHERWAVE NUBUS OR LC $184
ETHERWAVE AUI TRANSCEIVER 104
ETHERWAVE AAUI TRANSCEIVER 104
ETHERWAVE PRINTER ADAPTER 179
ETHERMAC LC-C 158
DAYNA
DAYNAPORT CS-T (10BASE-T) $79
DAYNAPORT CS-T 5 PAK (10BASE-T) 360
DAYNA MINI-HUB F-T 122
DAYNAPORT E/II - T NUBUS 10-T 105
ASANTE
MACCON + 610E ENET THICK/10BASE-T $169
MACCON+ 610 THICK/THIN/10BASE-T ... 197
MC+610E CENTRIS TH/TN 189
FRIENDLY NET ADAPTER THIN 55
FRIENDLY NET ADAPTER THICK 69
10-BASE-T HUB WITH 8THIN PORT 145

Overnight Delivery $7.50 and up
Prices Subject to change without notice
UPS Ground $6 and up
Returns Subject to Approval & Restocking Fee
MasterCard, VISA & Discover, no surcharge
Office Hours: M-F, 7am to 6pm; Sat., 9am to 4pm, PST
MAC Xtra 1075 Bellevue Way NE, Suite 114 Bellevue, WA 98004 - Phone (206) 746-3803
WK031896

REAL-LIFE SUBSCRIBER SAGAS

Those dreaded subscription applications. They can bring even the most confident Mac professional to his knees. But, what a relief to know that supplying real numbers—instead of vague answers like "lots" or "not enough"—can mean an entire year of MacWEEK...*free!*

For a subscriber story with a happy ending, answer every question, supply real, accurate numbers and fill out the form *yourself*. Then sign it, date it and get it in the mail, fast!

Follow all form instructions carefully and a full, free year of MacWEEK could be coming your way soon.

MacWEEK

Your weekly adventure in Macintosh information.

GET YOUR OWN TO

FREE SUBSCRIPTION MacWEEK!

COMPLETE AND RETURN FORM.
A complimentary one-year subscription will be sent to applicants who qualify.
We can't process this form unless you:
1) answer all the questions completely
2) sign and date your form
3) use specific numbers when answering questions requesting quantities. Free subscriptions available in U.S. and Canada only.

Required: Full company name and company address must be written below or application cannot be processed. *Please print.* Military: please specify branch of service and name of base (if applicable).

First Name | Last Name

Title | Business Telephone

Company Name

Division | Mail Stop Delivery

Street Address (Where you work) P.O. Boxes not accepted on this line.

City | State | Zip

Business Fax Number

Optional: DELIVERY ADDRESS (Home or P.O. Box). Enter address below only if your company WILL NOT accept delivery to the company address already listed. Address below is:
☐ A. Home ☐ B. Alternate Company Address

Post Office Box or Street Address

City | State | Zip

• **Please start/continue my FREE subscription to MacWEEK.**
☐ 01. Yes ☐ 02. No

1 What is your organization's primary business activity at this *entire* location? (Select one only) Write Answer Here ➡

Non-Computer Related
01. Graphic Arts
02. Publishing
03. Advertising, Public Relations, Promotion
04. Digital Media Development
05. Entertainment/ Broadcast
06. Commercial Printer
07. Service Bureau/ Pre-Press
08. Aerospace
09. Architecture, Engineering
10. Telecommunications
11. Government
12. Manufacturing
13. Education: College/ University/Trade
14. Education: High School/Elementary
15. Finance: Banking, Accounting, Insurance, Real Estate, Legal
16. Health, Medical
17. Non-Computer Retailer, Wholesaler, Distributor
18. Research and Development
19. Agriculture, Mining, Construction, Oil
20. Transportation, Utilities

Computer Related
22. Manufacturer (Computers, Software, Peripherals)
23. VAR, VAD, Systems/ Network Integrator
24. Retailer/Distributor
25. Systems House/Data Processing Service
26. Computer Consultant
27. Other Businesses and Services
99. Other_____ (please specify)

2 What is your job function? (Select one only) Write Answer Here ➡

A. Networking/Data Communications
B. MIS/DP/Information Systems
C. Systems Engineering
D. Telecommunications
E. Graphic Arts/Design
F. Production/Pre-Press
G. Video Production
H. Audio Production
I. Communications/ Publishing/Public Relations/Advertising
J. Engineering/Architecture
K. Science/Research & Development
L. Education/Training/ Development
M. Manufacturing/ Operations/Production/ Quality Control
N. Administration/ Management/Personnel
O. Accounting/Finance/ Legal
P. Sales/Marketing
Q. Purchasing
R. Consulting
Z. Other_____ (please specify)

3 Which of the following brands of systems and/or applications software do you have installed at this *entire* location? (Check all that apply)

Operating Systems
☐01. System 7
☐02. System 6, 5 or earlier
☐03. Unix/Xenix/AUX/AIX
☐04. PowerOpen
☐05. Windows 3.X
☐06. Windows NT
☐07. Windows 95
☐08. NeXTStep
☐09. Solaris
☐10. OSF/Motif
☐11. Other_____ (please specify)

Network Operating Systems
☐13. Novell NetWare
☐14. Unix/NFS
☐15. LAN Manager
☐16. Banyan VINES
☐17. AppleShare
☐18. DEC PathWorks
☐19. Other_____ (please specify)

Groupware
☐21. Lotus Notes
☐22. Windows for Workgroups
☐23. FirstClass
☐24. Novell GroupWise
☐25. Apple Open Collaboration Environment (AOCE)
☐26. Other_____ (please specify)

Database Engines
☐28. Oracle
☐29. Sybase SQL Server
☐30. Ingres
☐31. Informix
☐32. 4D Server
☐33. DB2
☐34. Other_____ (please specify)

On-Line Services
☐36. America Online
☐37. CompuServe
☐38. e-World
☐39. Prodigy
☐40. Internet
☐41. Delphi
☐42. Genie
☐43. Other_____ (please specify)

4 Please indicate the quantities of the computers currently installed and indicate the computers planned for purchase in one year at this *entire* location.

(Write in accurate quantities for all that apply.)

	Currently Installed (Quantity)	PLAN TO PURCHASE
Macintosh/Compatible		
Apple Power Mac 8100	1.	1.☐
Apple Power Mac 7100	2.	2.☐
Apple Power Mac 6100	3.	3.☐
Radius Power Mac Compatible	4.	4.☐
Power Computing Power Mac Compatible	5.	5.☐
Daystar Power Mac Compatible	6.	6.☐
Other Power Mac Compatible	7.	7.☐
Macintosh Quadra	8.	8.☐
Macintosh Centris	9.	9.☐
Macintosh Performa	10.	10.☐
Macintosh PowerBook	11.	11.☐
Macintosh Duo	12.	12.☐
Macintosh Other (II, LC, SE, etc...)	13.	13.☐
Other Mac Compatible	14.	14.☐
Other Desktops		
IBM/Compatible Desktop/Laptop/Notebook	15.	15.☐
PowerPC (Non-Mac Compatible)	16.	16.☐
Workstation (SPARC, MIPS, HP/Apollo, etc.)	17.	17.☐
Other Microcomputers	18.	18.☐

USE NUMBERS ONLY

5A How many servers are installed at this *entire* location? (Use numbers only)

5B How many LANs are installed at this *entire* location? (Use numbers only)

5C How many Macintoshes are connected to the LANs indicated in Question 5B above? (Use numbers only)

6 If applicable: how many Macintoshes are sold, resold, or recommended in one year at this *entire* location? (Answer one only)

A. Retailer: Number sold per year_____
B. Reseller: Number resold per year_____
C. Consultant: Number purchased by your clients through your firm's recommendation per year_____
D. Other: Number sold/resold/recommended per year_____
☐ E. Not Applicable

7A Which of the following Macintosh-related products do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Systems
☐01. Apple Macintoshes
☐02. Mac Compatibles
☐03. IBM Compatible Micros
☐04. Servers
☐05. Workstations
☐06. Minis/Mainframes
☐07. Newton PDA
☐08. Pen-Based Computers

Networking
☐10. LANs
☐11. WANs
☐12. Mac to PC Links
☐13. Mac to Mini/ Mainframe Links
☐14. Mac to Unix Workstation Links
☐15. Modems
☐16. Communication/ Network Software
☐17. Bridges/Routers/ Gateways
☐18. Hubs
☐19. NICS

Printers
☐21. Laser
☐22. Color Laser
☐23. InkJet
☐24. Color InkJet
☐25. Dye Sub
☐26. Thermal Wax
☐27. Plotter
☐28. Portable Printer

Image Input
☐30. Digital Camera
☐31. Flatbed Scanners
☐32. Handheld Scanners
☐33. Slide Scanners
☐34. Drum Scanners
☐35. Black/White Scanners

Displays
☐37. 14 inch
☐38. 15 inch
☐39. 17 inch
☐40. 21+ inch
☐41. LCD Projection Panel
☐42. Presentation Monitors

Peripherals
☐44. UPS
☐45. External Speakers
☐46. Input Devices
☐47. Video Deck
☐48. Image Setter

Storage
☐50. Photo CD
☐51. Magneto Optical
☐52. RAID
☐53. Hard Drive 1 Gig +
☐54. Hard Drive < 1 Gig

Add-In Boards
☐56. CD Recorder
☐57. Memory Boards
☐58. Display Boards
☐59. Video Digitizer Boards
☐60. Accelerator Boards
☐61. Sound Boards
☐62. MIDI
☐63. Video Capture/ Compression
99.☐ None of the above

Your Signature _____

Title _____ Date ___/ ___/ ___

7B Which of the following systems and/or applications software do you specify, recommend, buy or approve the purchase of? (Check all that apply)

Graphic Arts
☐01. Desktop Publishing
☐02. Electronic Publishing
☐03. Painting/Drawing Programs
☐04. Photo Retouching
☐05. Page Layout
☐06. Illustration Programs
☐07. Fonts
☐08. Pre-Press
☐09. Color Management
☐10. Digital Video
☐11. Other_____ (please specify)

Multimedia
☐13. Authoring Software
☐14. Video Editing
☐15. Sound Editing
☐16. Music Composition/ Editing
☐17. Animation
☐18. Clip Media (Sound and Art)
☐19. Other_____ (please specify)

Presentation Graphics
☐21. Presentation Software
☐22. Multimedia Presentations
☐23. Charting Program
☐24. Other_____ (please specify)

Design/Engineering
☐26. CAD/CAM
☐27. 2/D - 3/D Modeling
☐28. Simulation
☐29. Other_____

Business Applications
☐31. Word Processing
☐32. Spreadsheets
☐33. Databases
☐34. Project Management
☐35. Accounting/Payroll
☐36. Groupware
☐37. Desktop Video Conf.
☐38. Document Management
☐39. Mapping/GIS
☐40. Pen-Based Applications
☐41. Other_____ (please specify)

Systems Management
☐43. Operating Systems
☐44. Utilities
☐45. Applications Development
☐46. CASE
☐47. Programming Languages
☐48. Compilers
☐49. SQL Applications
☐50. Client Server Applications
☐51. Other_____ (please specify)
99.☐ None of the above

8 If you indicated purchasing involvement for computers, computer products or services in Question 7A or Question 7B, for how many Macintoshes do you have this involvement? (Select one only) Write Answer Here ➡

01. 2000+ 02. 1000-1999 03. 500-999 04. 100-499 05. 50-99 06. 20-49 07. 10-19 08. 5-9 09. 1-4 99. None

9 For what applications are the Macintoshes at your location used? (Check all that apply)

☐ 01. Graphic Arts
☐ 02. Presentation Graphics
☐ 03. Multimedia
☐ 04. Design/Engineering
☐ 05. Business Applications
☐ 06. Systems Management
☐ 99. Other_____ (please specify)

10 Over the course of one year, do you specify, recommend, buy, or approve the purchase of host systems, desktops, networking products, peripheral equipment and/or software worth: (Write number in box)

1. $5,000,000 or more
2. $2,500,000 to $4,999,999
3. $1,000,000 to $2,499,999
4. $600,000 to $999,999
5. $400,000 to $599,999
6. $200,000 to $399,999
7. $100,000 to $199,999
8. $50,000 to $99,999
9. $25,000 to $49,999
10. $10,000 to $24,999
11. Less than $10,000
99. None

Product Category	For this location (Write number in box)	For other locations (Write number in box)
Host Systems (Mainframes/Minis)	A.	G.
Desktops/Portables (Micros/Workstations)	B.	H.
Networking Products (include Servers)	C.	I.
Peripheral Equipment	D.	J.
Software Products	E.	K.
Service/Support	F.	L.

Indicate additional individuals at this location who might qualify for a FREE subscription to MacWEEK:

Name _____ Title _____

Name _____ Title _____

Name _____ Title _____

PLEASE BE SURE THAT ALL QUESTIONS ARE ANSWERED. V9601

C6NC-3

FOLD HERE FOR MAILING DO NOT STAPLE –TAPE HERE

CHECK ONE ONLY
- ☐ **ADDRESS CORRECTION**
- ☐ **NEW APPLICATION**
- ☐ **REQUALIFICATION**

Place stamp here. Post Office will not deliver without postage.

MacWEEK

P.O. Box 10632
Riverton NJ 08076-0632

FOLD HERE FOR MAILING DO NOT STAPLE –TAPE HERE

ADDRESS CHANGE?

Please provide your old address in the space provided below so that we may update your new mailing address promptly!

First Name | Last Name

Title | Business Telephone

Company Name

Division | Mail Stop Delivery

Street Address (Where you work) P.O. Boxes not accepted on this line.

City | State | Zip

REMINDER:

Complimentary Subscription Application

NOTE: A COMPLIMENTARY SUBSCRIPTION TO MACWEEK WILL BE SENT TO THOSE APPLICANTS WHO QUALIFY. PLEASE ANSWER ALL QUESTIONS COMPLETELY. INCOMPLETE FORMS WILL NOT BE PROCESSED. FOR QUESTIONS REQUESTING QUANTITIES, PLEASE USE SPECIFIC NUMBERS.

MarketPlace

THE SOURCE FOR DIRECT BUYERS OF MACINTOSH PRODUCTS, SERVICES AND INFORMATION

ADVERTISERS' INDEX

Hardware

(Includes Bar Coding, Boards, Communications/Networking, Computer Systems, Peripherals, Used Equipment)

Boss Microelectronics 68
Boxlight Corporation 65
Chip Merchant 62
Compu America 69
Compu Concepts 72
Compu USA 72
Computer Add-Ons 72
Computer Guys 70
Data Computer Center 72
Data Memory Systems 68
Datatech Remarketing 73
Diamond Computer Resources 68
DVC/Digital Video Concepts 62
Eritech International 68
GE Capital CRS 73
Griffin Communications Co. 72
Hawke Business 73
ICN 69
Immaculate Consulting 74
Infinity Micro Computers 69
Innovative Micro Products 68
Intercon Systems Corp 62
Intermark Technologies 68
Kelley Computers 72
LA Computer Center 63
Mac 1 International 70
Mac Base 65
Mac Net 65,70
Mac Rentals 74
Mac Resq 69
Mac Sale International 67
Mac Solutions 68
Macadapt 72
Macstorm International 72
Macworks 70
Maxed Systems 74
Media Guide 72
Media Store 73
Memory Merchants 73
Micro Products 70
MPD 64
Other World Computing 73
Peripheral Outlet 61
Peripherals & Systems 4 Export 73
Pre-Owned Electronics 74
Promax 65
Que Computers 72
Rapidata 69
Right Computer 72
Shreve Systems 71
Simm Saver Technologies 62
Sonnet Technologies 62
Source Computing 68
Starlight Technology 68
Syzygy Electronics, Inc 61
Tahoe Peripherals 60
T.D. Curran 73
V.L. Promac 72
VST Technologies, Inc. 66
World Micro Systems 72

Software

(Includes Bar Coding, Business Management, CAD-CAM, Communications/Networking, Desktop Publishing, Education, Finance, General, Graphics, Multimedia)

A1 Computers 74
ACI US, Inc. 66
APT Communications, inc. 59
Cypress Research Corp. 66
Digitool 66
Everyware Development 59
Tenon Intersystems 66
Vicom Technology 74

Special Services

(Includes Digital Output Services, Disk Duplication, General, Graphics, Programming/Consulting, Rental/Leasing, Repair/Recovery Services, Toner Recharging, Training)

3E Corp. 75
800wefixmacs 75
Data Recovery technology 75
Drivesavers 75
DT&T Macintosh Services 75
Isomedia 74
Lazarus Data Recovery 75
OnTrack Data Recovery 75
Tellan Software 74
Total Recall 75

Accessories

Microstore 74
Moustrak 74

CD ROM

RSL Catalogic Corporation 75

Career Opportunities

Conde Nast Publications 75
Scientific Placement 75
Ziff-Davis HR 75

ACCOUNT REPRESENTATIVES **800-825-4237**

♦ Thomas Foran ♦ Chelsea Morroni ♦ Dara Cook ♦ Jillian McAlley ♦ Steve Shalit ♦

Southwest x5145 Midwest x5122 Northwest x5327 East x5155 Sales Manager x5865

Lack
DOCUMENT MANAGEMENT
skills?

here's
A QUICK
brush up

ENTERPRISE
DOCUMENT MANAGEMENT

Group document preparation • Document version tracking • Security through restricted access features • Search with up to 14 document attributes • Fully customizable document categories • Works with all document types.

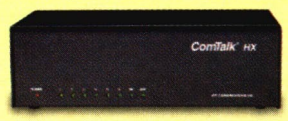
http://www.everyware.com/
EVERYWARE
7145 West Credit Ave.
Building 1 Mississauga, Ont. L5N 6J7
Tel: 905•819•1173

Mac Networking Solutions

Visit our web site at http://www.aptcom.com/

All-in-One Modular LAN/WAN Router!

- ✔• LocalTalk - Ethernet router
- ✔• Ethernet - Ethernet router
- ✔• High Speed WAN router (56K-T1)
- ✔• Dial Up SW56/ISDN router



The Enterprise Router for K-12...

- 2 Ethernet and up to 6 LocalTalk ports.
- WAN ports for interconnecting schools, or connecting to the Internet.
- Easy to manage through a Mac (no complex terminal commands to be typed).
- Meet current needs (and budget) now, and upgrade with more ports later.

Ideal for Graphic Arts/Prepress...

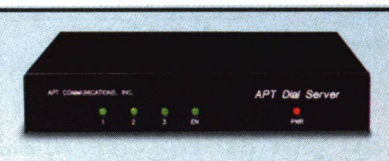
- SW56, ISDN, or T1 access for clients.
- Mac orientated point & click management, instead of type and pray!
- Desktop Dialing software for Mac users, with Applescript support.
- Drag & Drop alias for automated file transfers.
- Expandable to 6 WANs & 2 Ethernets.

ComTalk HX
Port Options- Ethernet (2 max); WAN/LocalTalk (6 max)

3 LocalTalks-Ethernet Router

- Lowest cost per LocalTalk router connection.
- Four Mice rating from MacUser (July 1994).
- Highest performance(MacUser July 1994).
- Zone and Device Security.
- Full SNMP support.
- Optional AppleTalk-TCP/IP Gateway.

ComTalk HF for $1500!



3 Port Dial in-Dial out Server

- Dial in ARA 2.0 & 1.0 (auto detection).
- Dial out to on line services or the internet.
- Dial out fax with your favorite fax software.
- Dial out network-to-network ARA.
- Zone & device security by user group.
- Thick, Thin, and 10BaseT Ethernet.

APT Dial Server for $1500!

APT Communications, Inc.: 9607 Dr. Perry Road, Ijamsville, MD 21754
Tel: (800) 842-0626; (301) 874-3305 • **Fax:** (301) 874-5255

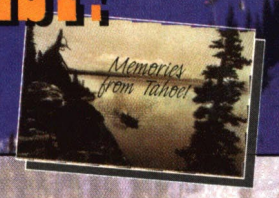
Tahoe Peripherals

WILDEST MEMORY PRICES IN THE WEST!

1-800-288-6040

- Resellers Welcome Order Line: ext 1776
- Gov't Order Line: ext1954
- International Order Line: 001-702-832-3600
- Fax: 702- 832-3611

Mon - Fri. 6am - 6pm NEW Sat. 8 am - 12 noon PST



Kingston TECHNOLOGY CORPORATION

POWERBOOK 500/5300/190
(Uses self refresh DRAM)

Kingston 4MB	188	—	147
Kingston 8MB	295	285	275
Kingston 16MB	575	549	540
Kingston 24MB	850	810	—
Kingston 32MB	1120	1055	1065

Kingston Technical Support 714 435 2639

Memory

168 Pin DIMMS
For PowerMac 9500, 8500, 7500, 7200

4MB 60NS	122
8MB 60NS	150
16MB 60NS	298
32MB 60NS	599
64MB 60NS	1300

72 Pin SIMMS

4MB 70/60NS	69
8MB 70/60NS	141
16MB 70/60NS	285
32MB 60NS	600

64 Pin SIMMS

1MB 80/70NS	42
4MB 80/70NS	150
8MB 70NS	350
16MB 70NS	650

4MB PAL SIMMS for II,IIx

4MB 80/70NS	139

STANDARD 30-pin SIMMs

1MB 100NS	26
1MB 70NS	29
2MB 70/80NS	65/63
4MB 70NS	95
8MB 70NS	305
16MB 70NS	580

PowerMac 6100,7100,8100 CACHE

256K	92
512K	145

Mac VRAM

256K	19
512K	36

PowerMac 7200,7500,8500,9500 CACHE

256K	94
512K	142

PowerMac 7200,7500,8500,VRAM & 9500

1MEG	59
2MEG for 9500	169

DOS Memory

30-pin 36-bit SIMMs

1MB 70NS	29
4MB 70NS	95

72-pin 36-bit SIMMs

4MB 70NS	105
8MB 70NS	210
16MB 70NS	370
32MB 70NS	780

Printer memory

APPLE

Laserwriter II,IINTX, IINTX-J	4MB Kit	TPIMAPELL	171
Laserwriter IIF, IIG	4MB Kit	TP4MM IICI	109
	16MB Kit	TP16MMIICI	495
Laserwriter4/600	4 MB	TPA--LW600/4	165
Laserwriter16/1600PS	4 MB	TP1M3270	105
	8MB	TP2M3270	208
	16MB	TP4M3260L	425
Laserwriter Pro 600, 630	4MB	TP1M3270	105
	16MB	TP4M3260L	425
Laserwriter Pro 810	4MB	TPA-LW810/4	167
	8MB	TPA-LW810/8	299
Laserwriter Select 300	1MB	TP1M8270	29
	4MB	TP4M8870	115
Laserwriter Select 310	1MB	NA	37
	4MB	NA	105
Laserwriter Select 320	2MB	NA	102
	4MB	NA	187
	6MB	NA	260
Laserwriter Select 360	16MB	TP16MSEL360	422

TEXAS INSTRUMENTS

MICROLASER PS,	1MB	NA	55
TURBO XL	1MB	NA	60
MICROWRITER PS17, PS23, PS3	2MB	NA	106
MICROLASER PRO E,	1MB	NA	66
POWER PRO	2MB	NA	106
PRO 600, PS23,	4MB	NA	225
PS65, 600	8MB	NA	383

EPSON

ACTIONLASER 1000, 1500	512K Kit	NA	20
EPL 5000, 5200	2MB Module	NA	84
ACTIONLASER 1100, 1400	1MB	NA	37
EPL 3000, 5200 +	2MB	NA	69
	4MB	NA	105
ACTIONLASER 1600	1MB	NA	37
EPL 5600, 9000	2MB	NA	69
	4MB	NA	105
	8MB	NA	203
	16MB	NA	425
	32MB	NA	839

QMS

PS-860, 1700, 1725	2MB	TP4MQMS860	107
COLORSCRIPT 210-230	8MB	TP8QMS860208	
QMS-1000 MAGIC COLOR 1060, 1660, 3260			
	4MB	TP4MQMS 1060	107
	8MB	TP8MQMS 1060	208
	16MB	TP16MQMS 1060	430
	32MB	TP32MQMS 1060	846

HEWLETT PACKARD

DeskJet 500, 500C, 510, 550C Plus, 520, 560C	256K Cartridge				42
LaserJet II,IID,III,IIID, IIP,IIP Plus, IIIP	2MB	93	4MB		165
LaserJet IIISI,PaintJet XL 300	1MB	45			
	2MB	85			
	4MB	165			
	8MB	325			
DesignJet 600,650C	4MB	139			
	8MB	299			
	16MB	550			
DesignJet 200,220,	1MB	45			
LaserJet 4, 4M4SI, 4SIMX,	2MB	85			
DeskJet 1200C,	4MB	165			
DeskJet 1200C/PS	8MB	325			
LaserJet 4L	1MB card	49			
LaserJet 5L 1MB 66	2MB 115	4 MB 199	8MB 345		
LaserJet 4P, 4MPlus	1MB	45			
LaserJet 4V, 4MV	2MB	85			
Colour LaserJet	4MB	165			
LaserJet 5 Series	8MB	325			
DeskJet 1600C/1600CM	16MB	550			
	32MB	820			

Modems

GLOBAL VILLAGE
Global Village Communication

Global Village TelePort Platinum	$228	SUPRA 14.4 S/R Fax	$83
Global Village TelePort Gold II	$108	SUPRA 28.8 PB Fax/Modem	$166
Global Village PowerPort Platinum PB	$320	SUPRA 28.8 V.34 S/R Fax Modem	$153
Global Village PowerPort Mercury PB for the 500 Series and Duo's	$320	SUPRA V.32 BIS PB Fax	$162
		SUPRAEXPRESS 144 Plus/28.8 Ext. V.34	$83/152

Scanners & Printers

Polaroid SLIDE SCANNER
Polaroid (35mm slide scanner) up to2700 dpi in under a minute $1549

POLARVIEW LCD PANELS
Project Your Workstation Graphics from Computer to screen.
LCD Panels project computer or video images in real - time.

HR 2500 New Polarview (1024x768 pixel res.16.7 million colors)	$7999
HR 3000 LCD Ad Planner (16.7million colors: active-matrix TFT technology)	$4299
HR 1800 LCD Panel Line Art (256,000 colors: active-matrix TFT technology)	$3200
HR1500 LCD Ad Planner (256,000 colors: active-matrix TFT technology)	$2400

All the above Panels come with a carrying case

POLAROID POLARVIEW LCD PROJECTORS
Give your presentation impact with Polaroid's new Polaview 105, 95, 90 and LCD Projectors. Computer and /or video graphics directtly onto a meeting room screen.

Polarview 95	$7400	Polarview 85E	$5100
Polarview 80	$5999	Polarview 90	$6100

ALL POLAROID ACCESSORIES AVAILABLE

AGFA
AGFA SCANNERS

Studioscan IIsi (new speed improved)	$949
Studioscan IIsi Transparency Adaptor	$379
Arcus II	$2195

QMS MAGICOLOR CX
Laser printer series Call for Prices

VISIONEER
(models for Mac & PC)
Visioneer Paperport
(models for Mac & PC)

GCC TECHNOLOGIES Laser Printers

ELITE 600	$1347
ELITE 616	$2520
ELITE 808	$2700
ELITE 1208	$3988

'TORAY' PHASEWRITER DUAL
Optical Storage Solutions

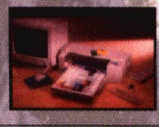
The Phasewriter Dual PD drive is a multimedia desktop system that eliminate the current need for an internal CD-Rom and external add-on storage peripheral by combining the two popular functions - at less than the price of the 2 products.

- 650Mb capacity per cartridge
- Advanced Phase Change Rewritable Technology- allows you to write to the same cartride again and again
- Quad Speed CD Rom player
- SCSI-II
- Device software included

Call for latest prices

EPSON Stylus PRO XL
Large-format printer Laser printer series

- Photo Quality
- Wide Format
- 720 x 720dpi
- Exclusive ink Jet Technology



Networking

ASANTÉ

Micro AsantePrint, 10BT	$287
Micro AsantePrint, Thk/Thn/10BT	$287
NuBus MacII/Pref 600 Thk/10BT	$109
NuBus MacII/Pref 600 Thk/Thn	$115
MacLC/Q600 Color Classic Thn	$109
MacLC/Q600 Color Classic 10BT	$90

DAYSTAR Fantastic Prices Etc.

PowerPro 100MHZ	1198
Turbo 100MHZ for MacII Ci	1140
Turbo 100MHZ for MacIISI	1095
Turbo 100MHZ IIVi, IIVX, Perf 600	1095
Turbo 66MHZ IIVi, IIVX, Perf 600	790
Powercard 601 50/66MHZ	589

Same Day or FREE Shipping Call for details

- All product meets or exceeds Apple's original specs.
- All modules use NEW DRAM late 1994 datecode
- All deliveries will be made on promise date or WE PAY shipping.
- All memory modules carry a LIFETIME WARRANTY.

Tahoe Peripherals is a wholly owned subsidiary of the Datrontech Group, a publicly traded corporation

All prices reflect cash discount. Prices subject to change without notice. NEVADA residents only must add applicable sales tax.

Credit cards are verified for fraudulent use.

VISA MasterCard DISCOVER NOVUS

Tahoe Peripherals, 999 Tahoe Blvd, # 301 Incline Village, NV 89451

Our Web Site: http://www.tahoe-peripherals.com/

E-mail address: mw@tahoe-peripherals.com

Memory - Buy, Sell or Trade

30 pin
72 pin
PB 1xx
DUO
PB 5xx
DIMM
VRAM

We want your used RAM, SIMMs, SIPPS
- 30 or 72 pin SIMMs or SIPPs
- Proprietary Configurations
- Laptop and Notebook Memory
- Any Configuration
- Any Size - even lowly 256K
- Any Speed
- Through Hole, or Surface Mount
- Working or Broken
- Any Quantity

256K
512K
1MB
2MB
4MB
8MB
16MB
32MB
64MB
Any!

LOWEST SIMM PRICES EVER!
8MB DIMM $112
4x32 60ns $225
2x8 80ns $32
4x8 80ns $64
16x8 70ns $299
PB 140 6MB $149
Clip Accelerators $49
*Limited Quantities

We stock, for trade-in or Purchase:
1x32,1x36 80/70/60ns
2x32,2x36 80/70/60ns
4x32,4x36 70/60ns
8x32,8x36 70/60ns
Macintosh DIMMs
1x8/9, 2x8, 4x8/9, 16x8/9
Powerbook 1xx, Duo, Powerbook 5xx
30 day Money Back Guarantee
Lifetime Guarantee

Macintosh Memory Experts

It's easy - in a single toll-free call, one of our friendly operators will help you identify the value of your old memory.
Once you have a price quote, send your memory to us, instructing us to issue a check, or trade-in for usable memory. Trade-Ins receive up to a 5% bonus!

We produce a fully itemized listing of the parts we've received, and publish a buyback price sheet - just so you can compare and confirm- you'll see why we're the ones written about in PC World and Der Spiegel!

Trade In, or just Sell - They've done it:
MIT
AARP
Hughes Aircraft
Harvard University
The 3M Corporation
The Whirlpool Corporation
US Department of the Treasury
We've even satisfied Charlie Darling!

MEMORY TRADERS
1-800-315-7807
703-243-4006 FAX 703-522-6626
1117 North 19th Street Suite 1201
Arlington, VA 22209

MasterCard VISA

PERIPHERAL

PERIPHERAL OUTLET, Inc.

800/259-8989

SAVE MONEY!
Peripheral Outlet will buy your old memory at great prices.

TOLL FREE TECH SUPPORT
Our tech support and installation instructions are the best in the industry!
LIFETIME WARRANTY on all memory products
Order by 6:30PM CST for same day shipping*
Overnight delivery from $8.00 *some restrictions apply

PowerBook 5300/190 Memory
4 / 8 Megabyte upgrade ..... 155.00 / 295.00
16 / 32 Megabyte upgrade ..... 545.00 / 1035.00
40 / 48 / 56 Megabyte upgrade ..... CALL

72 Pin Memory for the Mac

	80ns	70ns	60ns
4 Megabyte			
8 Megabyte	*Prices Changing -*		
16 MB-Non Composite	*Call for Best Prices!*		
32 MB-Non Composite			

PowerBook 500-series Memory
4 / 8 Megabyte upgrade ..... 145.00 / 269.00
16 / 24 Megabyte upgrade ..... 539.00 / 859.00
32 Megabyte upgrade 1049.00

PowerBook 100-series Memory
2, 4, 6, 8, and 10 MB Upgrades - Call for the latest prices!
All PowerBook memory upgrades include necessary tools, static protection, and instructions for safe installation.

Cache Cards, Etc.
Cache Cards for 7200/7500/8500 ..... CALL
256K/512K/1 MB Cache Card for PowerMacs ..... CALL
128K Cache Card for Quadras ..... from 125.00
IIci/IIsi 64K Cache Card 125.00/159.00

PERIPHERAL OUTLET, Inc.
327 East 14th, PO Box 2329 • Ada, Oklahoma 74820
405/332-6581 FAX 405/436-2245 AppleLink-PERIPHERAL
Internet - sales@peripheral.com
HOURS: Monday–Thursday 6AM-7PM CST, Friday 6AM-6PM

INTERNATIONAL TOLL FREE NUMBERS FOR DEALERS ONLY:
Japan 0066 33800 120, UK 0800 962 058, Sweden 020 797 857
Norway 800 12698, France 0590 1997, Australia 1 800 122 764
Spain 900 931 089, Switzerland 155 7608, Italy 1 678 77937
Germany 0130 818 983, Netherlands 0602 26638

We accept Visa/MC/Amex/Discover, and COD Cashiers check upon approval. Educational, Government, and Fortune 500 P/Os accepted upon approval. Due to volatility in the market all prices and availability are subject to change without notice.

168 pin DIMMs for PCI Macs
8 / 16 Megabyte
32 / 64 Megabyte
128 Megabyte
Prices Changing – Call for Best Prices!

Standard 30 pin SIMMs
1, 2, 4, 8, and 16 Megabyte SIMMs
Prices Changing –Call for Best Prices!

Video RAM
1 MB VRAM for 7200/7500/8500 ..... 63.00
2 MB VRAM for ATI Video Card 169.00
256K/512K VRAM 80ns ..... 21.00 / 27.00

68882 Math Coprocessors
68882 25 MHz FPU 49.00
68882 33 MHz FPU 59.00
68882 50 MHz FPU 99.00

Newton Upgrade Products
512K Static RAM Storage Card 89.00
1 Megabyte Static RAM Storage Card 124.00
2 Megabyte Static RAM Storage Card 235.00
2/4 Megabyte Flash Storage Card .. 99.00 / 159.00
8 Megabyte Flash Storage Card 254.00
16 Megabyte Flash Storage Card 565.00

Duo-series Memory
4 / 8 Megabyte upgrade ..... 169.00 / 289.00
12 / 14 Megabyte upgrade .. 469.00 / 563.00
20 / 28 Megabyte upgrade . 759.00 / 1025.00

Miscellaneous
68040 processors with FPU ..... from 179.00
LaserWriter 320 2, 4, 6MB upgrades ..... CALL
LaserWriter Pro 810 4MB/8 MB upgrades ..... CALL
T.I. MicroLaser 1 MB 39.00
Mac Classic 1 MB Board 75.00
68851 16MHz PMMU 89.00
if requested, MODE 32 software included free w/PMMU
Mac Portable 3-7 MB Cards ..... CALL

PowerMacintosh Accelerators
Call us for ways to economically increase the speed of any PowerMac by 30-40%!

68030 50 MHz Accelerator $339
MacUser ★★★★½
Speed increases of up to 400% with the DiiMOCache 50MHz 68030 Accelerator. The DiiMO outperforms the DayStar PowerCache 50MHz and also most of the 68040 25MHz accelerators. The DiiMO 50MHz runs on the LC, LCII, LCIII, II, IIx, IIcx, IIci, IIvi, IIsi, SE/30, and the Performa 600/400 series. Call for adapter prices.
DiiMOCache 50MHz Accelerator without FPU $339.00
DiiMOCache 50MHz Accelerator with FPU $399.00

68040 Processor with FPU $179
For the Centris and Quadra 605, 610, 650 and 660AV, and the Performa 475/476 and LC 475.
33MHz for Quadra 650 and LC 575 ..... $279.00
40MHz ..... CALL

Premier

SIMMs, DIMMs, PB & DUO MODULES, VRAM... SPECIAL ORDERS!

(800) 808-CHIP (800) 808-2447

THE Chip MERCHANT

Why should YOU pay for fancy advertising??? Buy *quality* memory, not expensive ads!

For Ordering Call: (800) 808-CHIP Ext. 3

For Information Call: (619) 268-4774
4870 Viewridge Ave., San Diego, CA 92123

LIFETIME WARRANTY !!!
On NEW & USED
SIMMs, DIMMs, & Printer Memory

We also BUYBACK used memory! Call Ext. 7 for details.

(800) 808-2447 (800) 808-CHIP

POWERMAC ACCELERATION

6100, 7100, Performa 611x, 8100/100
- 16 dial-selectable speeds
- Low noise, high output CPU fan
- Detailed manual
- Bench testing software disk
- Requires NO expansion slots
- Installs in under 5 minutes
- NO permanent modification
- Toll-free technical support
- 30-day money-back guarantee
- 1-year warranty

6100 up to 90MHz
Performa 611x up to 90MHz
7100/66 up to 90MHz
7100/80 up to 93MHz
8100/100 up to 126MHz
$79.95
Do not be misled. With thousands sold, accept only the DVC Equalizer™!

L2 CACHE CARDS
6100/7100/8100/Performa 611X
256K.....$125
512K.....$259
1024K.....as low as.$299
7200/7500/8500
256K DIMM Cache.....$125
512K DIMM Cache.....$199

DVC Equalizer for 9500/8500
- 32 dial-selectable speed settings
- Protection circuit prevents installation damage
- LED light indicates correct installation
- NO permanent modifications
- Requires NO expansion slots

UP TO 175MHz $19.95

800-889-5137
417-889-5113 / 417-889-7980 FAX
DVCBOOSTER@AOL.COM
DVC HARDWARE™

SimmSaver Memory Solutions
Visit Us At CeBit Hall 6, Stand C20, Booth CO3

SimmSaver Technology, Inc. (STI) provides owners of Macs, PowerPCs and PowerBooks with quality memory and performance upgrade solutions, including its own Patent Pending SimmSaver series of adapters. STI also is now your source for the highly-rated Princeton line of memory modules, warranted by a Lifetime Guarantee! Call us today for solutions to your memory and performance needs!

NEW! PRINCETON memory for every Mac, PowerPC, and PowerBook. Best price/performance, available in EDO.

NEW! DIMMSAVER/R is the reversible adapter that converts two 72-pin SIMMs into one 2M, 4M, 8M, 16M, 32M, 64M, 128M DIMM!

NEW! CLOCKSLIDER w/thermal fan allows user to increase/decrease CPU performance via software

1-800-636-7281

SimmSaver® Technology, Inc. Tel. (316) 264-2244 • Fax: (316) 264-4445 • http://WWW.solgate.com/sti • E-mail: simmsave@solgate.com

SONNET BEST BUYS TO RUN YOUR MAC FASTER

Accelerate Your Mac to 68040 Speed
Sonnet Presto accelerators increase LC and Mac II series performance 200-600%.

		w/FPU
50/25MHz LC, LC II	$199	$299
80/40MHz IIci, IIsi*	$299	$399
80/40MHz with 128K cache	$399	$499

*Adapter req'd $49 NuBus Adapter IIsi $149

Math Coprocessors for 68040 Macs
If you use CAD, Excel, or rendering programs, you will speed through applications like never before.

25MHz Q605,C/Q610,C650,LC475,P47X..	$149*
33MHz LC575,LC630,P57X,P63X	$199*
33MHz PB190,PB52X,PB54X,Duo 280	$399*

* with LC040 exchange. 68882 upgrades from $49.

Power Mac Cache/FPU

256K SIMM 6100/7100	$99
256K DIMM 7200/7500/8500	$125
512K DIMM 7200/7500/8500	$199
Power FPU software will run 68K FPU apps on Power PC FPU	$75

Fastest Quadra Ever! Plug in a 100/50 MHz 68040 Board and Fly
Double speed with full compatibility. Works in Quadra/Centris 610, 650, 660AV, 700, 900. 80/40MHz unit for Centris 610.

80/40 MHz	$249	w/FPU	$349
100/50 MHz w/FPU	$399		

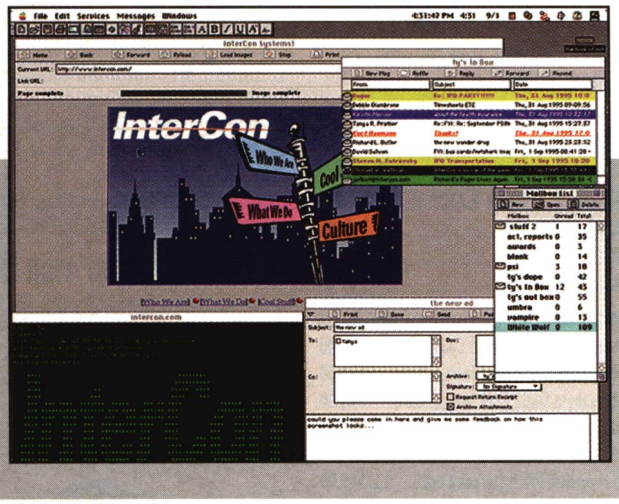
660AV NuBus Adapters.. $99

A Fast 68030 Gives Your Older Mac New Life
Give your older Mac more muscle with a Sonnet Allegro accelerator.

25 MHz Classic	1x72pin SIMM slot	$199
33 MHz SE	4x30pin SIMM slots	$199
33 MHz Mac II/IIx	Supports RAM Doubler	$189
33 MHz LC II	Includes FPU & 16K cache	$149
33 MHz Color Classic	Includes FPU & 16K cache	$149

SONNET TECHNOLOGIES, INC., 18004 Sky Park Circle Irvine, California 92714, 714-261-2800 Fax 261-2461
800-786-6260 sales@sonnettech.com

TCP/Connect II®
TCP/IP for Windows and Macintosh.



Telnet
- Keyboard remapping
- VT52-VT320
- TN3179g, TN3278
- Textronix

Email
- MIME
- Drag and Drop
- SMTP/POP Client
- Automatic keyword filing

THE high-performance, integrated corporate networking solution.

Additional features include:
- Web browser
- USENET news
- SLIP/PPP remote access
- CERN, Socks security
- FTP client/server
- Gopher bookmarks

Runs over SLIP/PPP and LAN/WAN connections.
30 Day Free Trial. Download it from the web at http://www.intercon.com/ or call 1-800-468-7266.

InterCon Systems Corporation
950 Herndon Parkway ■ Herndon, Virginia 22070
703.709.5500 (voice) ■ 703.709.5555 (fax)
info@intercon.com (email) ■ INTER.SALES (AppleLink)

Accelerated for Power Macintosh

InterCon

INFLUENCE

"MacWEEK Marketplace works for us because MacWEEK readers call the shots. You could probably multiply the circulation by ten, since MacWEEK readers influence many, many more people in their companies."

—Jay Hagan, Co-Owner, DriveSavers, Inc.

PUT YOUR AD HERE AND WRITE YOUR OWN MacWEEK SUCCESS STORY.
START ADVERTISING NOW! CALL 800-825-4237 TODAY!

LA's LEADING COMPUTER STORE!

LA COMPUTER CENTER

(800) 689-3933 ORDERS ONLY!

(310) 473-2535 FAX (310) 312-9041

E-mail us at: lacc@directnet.com

OPEN SATURDAY, VISIT OUR SHOWROOM!

12002 PICO BLVD. WEST LOS ANGELES, CA 90064

INTERNATIONAL ORDERS WELCOME! Call for Quantity Pricing!

WE WANT TO BUY YOUR NEW & USED APPLE PRODUCTS
UNIVERSITY, SCHOOLS, GOV'T & FORTUNE 1000 P.O.'S ACCEPTED!

FedEx NEXT DAY AND SAME DAY SHIPPING AVAILABLE, WE SHIP WORLDWIDE!

POWERMACS

9500 132MHZ! 16/1GIG/CD w/Video Card $3399

MONITOR AND KEYBOARD SOLD SEPERATELY.

8500 120MHZ! 16/1GIG/CD $3199

MONITOR AND KEYBOARD SOLD SEPERATELY.

7500 100MHZ! 16/1GIG/CD $2399

7500/100 16/500/CD $2199

6100/66	8/500/CD	$1099
6100/66/dos	16/500/CD	$1599
7100/80	8/700/CD	$1299
7100/80AV	16/700/CD	$1899
8100/100	8/700	$1999
8100/100AV	16/1GIG/CD	$2699
8100/110	16/2GIG/CD	$2699
7200/90	8/500/CD	$1299
8500/120	16/2GIG/CD	$3399
9500/120	16/1GIG/CD	$2799
9500/132	16/2GIG/CD	$3799
QUADRAS		
610	8/230/CD	$999*
80040/0	DEMO UNIT	$1799
WGS & WORKSTATIONS		
9150/80	8/2GIG/CD	$3299
9150/120	16/2-1G/CD/D	$5099
9150/120	16/2G/CD/D/A	$5799
8150/110	16/1G/CD/D/AS	$3899
8150/110	16/1G/CD/INT	$2699
8150/80	16/1GIG/CD/DAT	$2599
8150/80	8/500/AS	$2299
8150/80	16/1G/CD/DAT/AS	$3099
95/80	32/2G/256K/DAT/AS	$3399
6150/66	16/700/CD/AS	$2399

7200 90MHZ! 16/500/CD $1499

MONITOR AND KEYBOARD SOLD SEPERATELY.

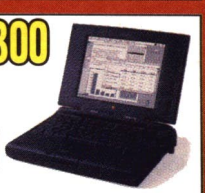
7200 75MHZ! 8/500/CD $1079

MONITOR AND KEYBOARD SOLD SEPERATELY.

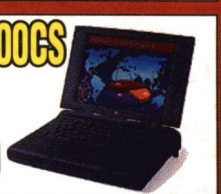
POWERBOOKS

PowerBook 5300CE 32/1GIG $4299

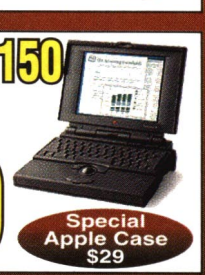
PowerBook 5300C 16/750 $3099



PowerBook 5300 8/500 $1099

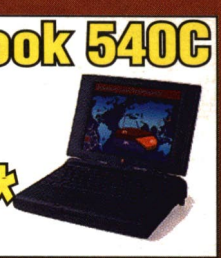


PowerBook 5300CS 8/500 $1949

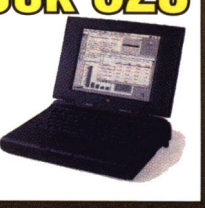


PowerBook 150 4/250 $799

Special Apple Case $29



PowerBook 540C 4/320 $2099*



PowerBook 520 4/240 $949

PowerBook 520C 4/240 $1299*

5300CS	16/500	$2299	520C	12/320/mod	$1899*
5300CS	16/750	$2679	Duo2300C	8/750	$3299
5300C	8/500	$2599	Duo2300C	20/1.1G/fax	$4199
190	8/500	$1299	Duo230	4/80	$699*
190CS	8/500	$1799	Duo250	4/200	$999*
180C	4/160/mod	$1899*	Duo250	12/200/Mod	$1399*
540	4/240	$1649*	Duo280	12/240/Mod	$1499*
540C	4/320	$2099*	Duo280C	4/320	$1699*
540C	12/320/mod	$2699*	Duo280C	12/320/Mod	$2299*
520	4/240	$949	Duo Dock		$399*
520C	4/240/mod	$1599*	DuoMate 8 PB Dock		$199

PERFORMAS

640CD Dos Compatible 12/500/CD/DOS(DX2-66) INCLUDES 15" MONITOR $1249*

5215CD 8/1GIG/CD BUILT-IN 15" MONITOR $1499

638CD 8/350/CD INCLUDES 15" MONITOR $999*

6200CD 8/1GIG/CD INCLUDES 15" MONITOR $1499

6116CD 8/700/CD INCLUDES 14" MONITOR $1099*

631CD 8/500/CD INCLUDES 14" MONITOR $899*

6220CD 16/1GIG/CD NO MONITOR $1749

6300CD 16/1GIG/CD INCLUDES 15" MONITOR $2249

Performa 6205 8/1GIG/CD $1869

ORIGINAL APPLE 700MB HARD DRIVE! INTERNAL $169 EXTERNAL $229

PRINTERS

LaserWriter 4/600	$699
LaserWriter Personal	$329*
laserWriter Select 360 w/Toner	$1099
LaserWriter 16/600/PS	$2099
Color LaserWriter 12/600	$5999
Portable Stylewriter	$239*
StyleWriter 2200	$369
StyleWriter 1200	$179*
STAR COLOR PRINTER (MAC)	$99
HP LaserJet 5MP	$999
HP LaserJet 5SiMx	$3699

StyleWriter 1200 $199

StyleWriter 2400 $299

MONITORS

SONY

1425 14"	$389
15SXI/15SFII 15"	$429/499
17SFII 17"	$859
GDM 17SEII	$1049
20SFII 20"	$1759

RADIUS

SuperMatch 17"	$599*
SuperMatch 20"	$799*
Intellicolor 20	$1199*

APPLE

15" MultiScan $349

17" 1705	$649
17" 1710	$899
17" 1710AV	$949
20" MultiScan	$1749

WE ALSO CARRY TOSHIBA IBM COMPAQ

GE 4 YEAR ON SITE WARRANTY!

ASK YOUR SALES REP REGARDING GE EXTENDED ON SITE WARRANTY

$100 to $350	$351to $350	$701 to $1200	$1201 to $2000	$2001 to $3000	$4001 to $5000
$49.95	$79.95	$139.95	$169.95	$199.95	$259.95

* Reflects Refurbished Units. Prices Subject To Change Without Notice.
CALL FOR LATEST PRICE. ALL
PRICES REFLECT A 3% CASH DISCOUNT
Credit Cards Will Be Verified For Fraudulent Use.

Buy a Bundle, get an Instant Rebate

(Hurry! Instant Rebate Effective While Supplies Last)

PowerMac 7200/75 8/500 CD
$1,050.
PowerMac 7200/90 8/500 CD
$1,205.
PowerMac 7200/90 16/500 CD
$1,399.

+

LaserWriter Select 360
$1,164.
LaserWriter Pro 16/600
$2,163.
Color LaserWriter 12/600
$6,220.

PowerMac 7200/75 8/500 CD
$1,050.
PowerMac 7200/90 8/500 CD
$1,205.
PowerMac 7200/90 16/500 CD
$1,399.

+

MultipleScan 1705
$729.
AppleVision 1710
$922.
AppleVision 1710AV
$1,050.
Multiple Scan 20"
$1,995.

PowerMac 7200/75 8/500 CD
$899.
PowerMac 7200/90 8/500 CD
$1,055.
PowerMac 7200/90 16/500 CD
$1,250.

+

MultipleScan 1705
$729.
AppleVision 1710
$922.
AppleVision 1710AV
$1,050.
Multiple Scan 20"
$1,995.

+

LaserWriter Select 360
$1,164.
LaserWriter Pro 16/600
$2,163.
Color LaserWriter 12/600
$6,220.

Prices already includes Instant Rebate. Complete Bundle must be purchased to get Instant Rebate.

PowerMacs

PowerMac 7200/90 16/500 CD $1,450.

7200/75 8/500 CD	1,095.
7200/90 8/500 CD	1,255
7500/100 16/500 CD	2,345.
7500/100 16/1000 CD	2,405.
8500/120 16/1000 CD	3,580.
8500/120 16/2000 CD	4,110.
9500/132 16/1000 CD w/Video	3,450.
9500/132 16/2000 CD	3,749.
6100/66 8/500 CD	1,044.
7100/80 8/700 CD	1,434.

PowerBooks

PowerBook 5300/100 8/500 $1,165.

PowerBook 520 8/240	SPECIAL!! .995.
5300cs/100 8/500	2,137.
5300cs/100 16/750	2,744.
5300c/100 8/500	3,109.
5300c/100 16/750	3,410.
5300ce/117 32/1.1GB	5,395.
Duo 2300c/100	Call
190/66 8/500	1,314.
190cs/66 8/500	1,861.

Printers

StyleWriter 2200 $299.

StyleWriter 1200	199.
Color StyleWriter 2400	350.
Personal LaserWriter 320	760.
LaserWriter Select 360	1,164.
LaserWriter Pro 16/600	2,163.
LaserWriter 4/600ps	780.
Color LaserWriter 12/600	6,220.

Performas

Performa 5215 8/1GB CD $1,395.

631CD 8/500	1,330.
640CD 12/500	1,408.
6116CD 8/700	1,578.
6200CD 8/1GB	1,680.
6205CD 8/1GB	1,949.
6220CD/TV 16/1GB	1,857.
6300CD 16/1.2GB	2,321.

$795.
Performa 630CD 8/500 (CPU only)

Displays

14" Multiple Scan	325.
15" Multiple Scan	359.

Memory

4MB, 72-pin	71.
8MB, 72-pin	143.
16MB, 72-pin	307.
32MB, 72-pin	655.
4MB Dimm	111.
8MB Dimm	161.
16MB Dimm	320.
32MB Dimm	668.
64MB Dimm	1,333.

Please call for Volume Discounts.

FREE FedEx 2nd Day Shipping on CPU's Only.

$2,850.
PowerMac 9500/120 16/1000 CD

$3,450.
PowerMac 9500/132 16/1000 CD w/Video

Apple Color One Scanner $495.

Your PowerMac Number One Source

30-Day Money Back Guarantee(*)

Visit our Web Site at : http://www.shadow.net/~mpd

Please call for Custom Configurations. Prices reflect 3% discount for CASH ONLY!. Prices subject to change without notice. Please call for latest prices. (*) Certain conditions apply. All Major Credit Cards accepted. International orders Welcome.

Call (305) 477-4441 or Fax Us at (305) 477-4602.

- **48 Hours Turn-Around on Warranty Repairs.**
- **School & Government PO's Welcome.**
- **Leasing Terms Available, Call for Details**

1-800-993-5673

MICRO PRODUCT DISTRIBUTORS

Radius SyQuest Microtek Quantum Pinnacle Micro IOmega

Premier Asante Farallon Dayna GCC FWB QMS Hewlett Packard TrueVision US Robotics

MACBASE™ U.S.A

1941 B Freeman Signal Hills, CA 90804
Since 1988
HOURS : M-F 8-6 PST SAT 10-2
(800)951-1230
International (310)498-1230 FAX (310)498-0032

6100/66Mhz 8MB/500HD

Blow Out

$999

Mon. & Kb sold separately

FedEx **WEEKLY SPECIALS**

PowerBook 540c

The PowerBook 540c is one of Apple's top of the line color PowerBook computer, combining the high performance Motorola 68LC040 processor with an active matrix color display • It has 68LC040 processor running at 66/33 Mhz. upgradable to PowerPC processor • Built in ethernet and video out port supporting most Apple monitor display. 4 Mb of RAM expandable to 36 MB • Optional 19.2bps Global Village fax modem• High capacity Type II nickel metal hydride • Weight : 7.3 lbs

*Apple Factory Refurbished

Mac CPUs

6100/66 8/500/CD $1119

6100/66 16/500/CD DOS	$1559
7200/75 8/500/CD	$1099
7200/90 8/500/CD	$1299
7500/100 16/500/CD	$2278
7500/100 16/1GB/CD	$2399

8500/120 16/1GB/CD $3349

9500/132 16/1GB/CD/VI	$3499

PERFORMA

Performa 6116 8/700/CD	$1399
Performa 5215 8/1GB/CD	$1479

P6200 8/1GB/CD $1498

Performa 6220 16/1GB/CD/TV	$1699
Performa 6230 16/1GB/CD/ M	$1769
Performa 6290/100 MHZ	$1999
Performa 6300 16/1GB/CD	$2279

CALL US FOR CURRENT PRICING

PowerBook

PB 5300ce 32/1.1GB	$4795
PB 5300c 8/500	CALL
PB 5300c 16/750	SEE SPECIALS
PB 5300cs 8/500	SEE SPECIALS
PB 5300cs 16/750	$2759
PB 5300 8/500	$1149
PB 190/66 8/500	$1279
PB 190cs/66 8/500	$1799
DUO 2300c 8/750	$3079
PB DUO 2300c 20/1GB/M	$3979

Custom Configuration

7200/75 24/1GB/CD	$1848
7200/90 32/1GB/CD	$2059
7500/100 40/1GB/CD	$3329
7500/100 64/4GB/CD	$4379
8100/100 40/2GB/CD	$3179
8500/120 128/2GB/CD	$6959
9500/132 64/2GB/CD	$5098
StyleWriter 1500 NEW	$298
Color StyleWriter 2500 NEW	$398

Call Us for the Apple Servers

4MB/320HD 12/500/MOD
$2098* Blow Out $2598*

7100/80 8/700/CD	$1289
PERFORMA 636 8/250/KB	$649
PERFORMA 630CD 8/250/CD/KB REF	$789
9500/120 16/1GB/CD	$2879
8100/100 8MB/700 HD BEST BUY	$1899
8100/110 16/2GB/CD	$2859
PB 5300CE/117 32/1.2GB	$4595
PB 5300C/100 16/750 Limited In Stock	$3189
PB 5300CS/100 8/500	$2019
PB 5300/100 8/500	$1149
LaserWriter 4/600 PS	$799
Color StyleWriter 2400	$329
StyleWriter 1200	$229
Apple PB 320MB HD, 2.5"	$149

Now On World Wide Web
http://www.MacBase.com

MEMORY

MEMORY PRODUCTS ARE NEW W/ LIFETIME WARRANTY

MAC 72-PIN

4MB 60ns	$99
8MB 60ns	$189
16MB 60ns 2K	$329
32MB 60ns 2K	$599

Kingston Memory Available

7200/7500/8500/9500

8MB DIMM		$189
16MB DIMM		$299
32MB DIMM	KINGSTON	$679
64MB DIMM		$1189
1MB V-RAM	KINGSTON	$65
256K L2 Cache	KINGSTON	$119
512K L2 Cache	KINGSTON	$179

PB5300 & 190 SERIES

4MB UPGRADE	$179
8MB UPGRADE KINGSTON	$269
16MB UPGRADE	$529
32MB UPGRADE	$998

PB 500 SERIES

4MB UPGRADE	$189
8MB UPGRADE	$289
16MB UPGRADE	$529
32MB UPGRADE In Stock	$1059

Prices reflect cash discounts and subject to change without notice.

Power Systems and Supplies.

POWER MACS

Power Mac 9500[132] 16/2GB/CD/VIDEO	3,399
Power Mac 9500[120] 16/1GB/CD	2,799
Power Mac 8500[120] 16/1GB/CD	3,199
Power Mac 7500[100] 16/1GB/CD	2,249
Power Mac 7200 [90] 8/500/CD	1,199
Power Mac 7200 [75] 8/500/CD	999
Power Mac 7100[80] AV 8/700/CD	1,399
Power Book 5300[100] 8/500	1,249
Power Book 5300[100] CS 8/500	2,199
Power Book 5300[100] C 16/750	3,399
Performa 5215[75] 8/1GB/CD/FAX	1,399
Performa 6200[75] 8/1GB/CD/FAX*	1,090

SyQuest ext.

CARTRIDGE	DRIVE
88MB 45	199
200MB 54	339
270MB 49	336
EZ 135MB 18	189
ZIP 13	199

PERIPHERALS

Laserwriter Color	5,399
Stylewriter 2400	339
Stylewriter 2200 Color	369
Laserwriter 4/600	749
Apple Monitor 14"- NEW	329
Apple Monitor 15"	349
Apple Monitor 17"- NEW	599
Apple Monitor 20"	1,799
Apple Keyboard	75
Geoport	109
Quick Take 150	649

HP PRINTERS

Deskwriter 600	249
Deskwriter 660C	349
Desk Jet 850C	399
Laser Jet 5MP	1,049
Laser Jet 4M Plus	1, 849

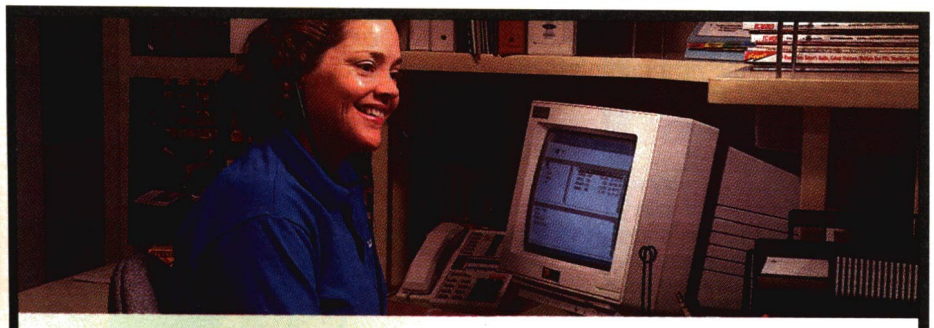
SCANNERS

Microtek II HR	549
Microtek 3E	369
Umax Vista	549

MACNET 1-800-404-9976

All products are fully warranted. Dealers inquires welcome.

Prices, availability and specifications are subject to change without notice. Prices reflect a cash discount! *CPU Only



"Boxlight sells more electronic projection systems, to more people than anyone. Call to find out why."

Panels from $1,799
Projectors from $3,999
Goodbye Slides!

Call for special price!

ProColor™ 3080

A bright, compact projector with superior color and clarity, use even in normally lit rooms.

- Mac or PC, Video plus Audio
- Only 16 lbs. travel weight
- Clarity sharp as 35 mm slides

As the most trusted name in Presentation Electronics™, we offer:

- Dialog with knowledgeable people who really help
- More than 50 models to choose from, available now
- 30-day money back guarantee

1-800-762-5757 BOXLIGHT™ DIRECT

Education: (800) 689-6676
Resellers: (800) 736-6956
Rental: (800) 736-6954

MW2

The Inc. 500 logo is a registered trademark of Goldhirsh Group, Inc.

Disk Arrays For Digital Video

Wide Disk Arrays Complete With Host Adapter and Software

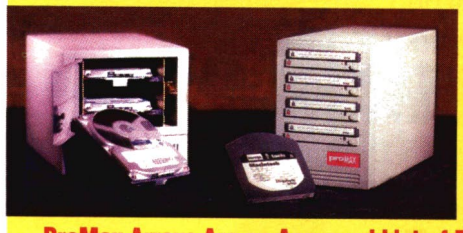
2 GB Internal Wide Array $899

All Wide Arrays include a Silicon Express IV or Adaptec 2940UW PCI SCSI Card + Remus Software

For 840-8100-8500-9500

External 2 GB Wide Array $1,099

LIMITED QUANTITY: 1 GB 9 ms Internal $249 • 1 GB 9 ms External $295



OTHER WIDE ARRAYS AVAILABLE

4 GB	External	$2,595
8 GB	External	$3,495
16 GB	External	$6,495
32 GB	External	$12,495

ProMax Arrays Are on Approved List of Radius, Truevision, and Data Translations

Let us Quote You a Fully Configured Macintosh Digital Video Editing System – That Really Works!

JAZ Arrays + CDR Systems

1 GB JAZ Internal $545
Includes a Cartridge and Bezel For 840-8100-8500-9500

1 GB JAZ External $595
Includes a Cartridge and Cabinet With Built-in Power Supply

2x CDR External $995

2 GB JAZ Array $1,295
With Fast/Wide SCSI PCI Host Adapter $1,745

4 GB JAZ Array $2,395
With Fast/Wide SCSI PCI Host Adapter $2,945

2x CDR + JAZ $1,495

JAZ Systems Complete With Cartridge and Lido 7 Software. JAZ Arrays Include Remus Software. CDR Systems Include Toast CD-ROM

Call Now For Additional Information • Sales: 1-800-977-6629 or Tel: 714-727-3977

FAX: 714-727-3546 • PROMAXTEC@AOL.COM • Web Page: http://www.scsidisk.com

proMAX ProMax Technology

16 Technology Drive · #106 • Irvine, CA 92718

Prices subject to change without notice. Trade names are the property of their respective owners.

Premier

PowerBook 190/5300 Solutions from VST

Essential products for people who are going places!

Expansion Bay Hard Drives

Expand your PowerBook 190/5300 with up to 1.2GB of extra storage space.

- Bootable from the box — just Plug-N-Play!
- Hot swappable - no need to restart, sleep, or shutdown
- 540MB, 810MB, and 1.2GB sizes available

Charger 5000 & Internal Batteries

Finally, you can stock up on spare PowerBook 190/5300 batteries, and charge them quickly and safely.

Charger 5000

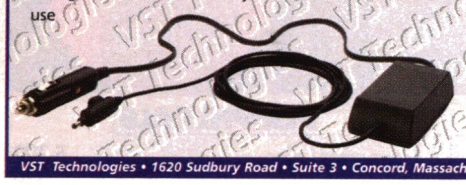
- Charge two batteries in the shortest possible time
- Charges any combination of Nickel Metal Hydride (NiMH) and Lithium-Ion (Li-Ion) batteries

Nickel Metal Hydride Internal 190/5300 Batteries

- Batteries meet or exceed ALL of Apple's specifications
- Average runtimes between 2.5 and 4 hours
- Specially priced Charger 5000 / Battery bundle available

Auto Adapter 5000

- Powers the PowerBook from any cigarette lighter socket
- Charges the internal battery while the PowerBook is in use



30 DAY moneyback guarantee

VST TECHNOLOGIES

VST Technologies • 1620 Sudbury Road • Suite 3 • Concord, Massachusetts 01742 • (508) 287-4600 • Fax (508) 287-4068 • vstinc@aol.com

LET SOMEONE ELSE DO IT!

Need a data management problem solved but don't have the time, or staff, or expertise to get it done? Turn the job over to a registered 4th Dimension developer, experts at using 4th Dimension® and the suite of 4D products for database application development. Whether your problem can be solved by an off-the-shelf solution or needs a custom personalized solution, there is a 4D Developer who can get the job done for you.

SOME 4D DEVELOPERS WHO COULD HAVE SOLUTIONS FOR YOU

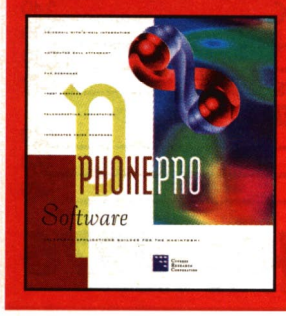
Footprints, Inc.	Custom Developers, Mac/Windows	800-635-5280
Natural Intelligence	Custom Development	800-999-4649
Pacific Data Management, Inc.	Custom Development Experts	800-220-6430
Softek Design, Inc.	Accounting SW Solutions	970-728-5252

ACI

For more information on 4D registered developers, call ACI at (408) 252-4444
ACI US, Inc. 20883 Stevens Creek Blvd., Cupertino, CA 95014

PhonePro Telephony Application Builder

Create the perfect computer telephony solution for your business with PhonePro™ software, the industry's most powerful, flexible, and professional-sounding telephone solution. PhonePro's unique icon-based scripting language is perfect for building voice messaging systems, information hot-lines, fax response systems, automatic paging systems and more.



- Software available for Apple's GeoPort™ Telecom Adapter, Pleiades Research Digital Storefront™, and voice capable SupraFAXModem V.32bis™ and V.32™
- E-mail connectivity, AppleScript, and Apple events aware.

For more information call our 24 hour information line at 800-CR-INFO1 or call us direct at 408-752-2700

CHECK OUR WEB SITE: www.cypressr.com

CYPRESS RESEARCH CORPORATION

Hang Ten with Mach Ten

Make Your Macintosh An Internet Server

Mach Ten... gives every Macintosh from Classics to PowerMacs:

1. Unlimited Web 'Home' Pages
2. Unlimited TCP Connections
3. Unlimited Mail Accounts
4. Unlimited Internet Addresses
5. Unlimited Domain Names
6. Domain Name Service (DNS)
7. POP Mail Service
8. Mac/UNIX File Sharing
9. Mac/UNIX Printer Sharing
10. Unlimited Possibilities

Mac™OS and UNIX on a single machine: *The Best Of Both Worlds.*

For more information, or to order call **1-800-6-MACH-10**
Internet: info@tenon.com http://www.tenon.com

TENON INTERSYSTEMS
1123 Chapala Street, Santa Barbara, CA 93101
Tel: 805-963-6983 • Fax: 805-962-8202

©1995 Tenon Intersystems. All trademarks are the property of their respective owners.

Macintosh® Common Lisp

The fully dynamic programming environment brought to you by Digitool, Inc. and Apple® Computer, Inc.

- Great Product
  - Automatic memory management - no more leaks!
  - Incremental compiler - no more waiting!
  - CLOS - industry standard object system
  - Full access to Mac Toolbox
  - Fast, efficient 68K code (PPC coming!)
  - Small application builder (MCL-AppGen)
- Great Support
- Great Community
- Great Student Price
  - $135.00

http://www.digitool.com/mcl6.html • ftp://ftp.digitool.com • news:comp.lang.lisp.mcl
mailto:info@digitool.com • tel: 617-441-5000 • fax: 617-576-7680

SUCCESS

"Year after year, MacWEEK Marketplace has always delivered for us. The ads always pay for themselves."

—Richard Harold, President, Shreve Systems

PUT YOUR AD HERE AND WRITE YOUR OWN MacWEEK SUCCESS STORY. START ADVERTISING NOW!

CALL 800-825-4237 TODAY!

LATEST Mac S·A·L·E INTERNATIONAL SPECIALS

* HUGE SAVINGS ON NEW *

New

PowerMac 7200
(CPU only)
75MHz 8/500/CD- $1,249.00
90MHz 16/500/CD- $1,599.00
Save $50 with Monitor & Keyboard Purchase

• New Apple Toner •
Select 300/310/360
ONLY $49.00

Personal LaserWriter NTR Logic Board
With Trade-in - $79.00

New

StyleWriter 1200
with Ink Cartridge & Cable
►$199.00◄

* NEW *

Performa 5215 8/1GB/CD	$1599.00	Apple 15" Multiple Scan Display	$375.00	MacAlly Ext. Kybd.	$55.00
PowerBook 140-180c Battery	$45.00	Apple PowerBook Int. Data/Fax Modem	$25.00	External Hard Drive Enclosure	$69.00

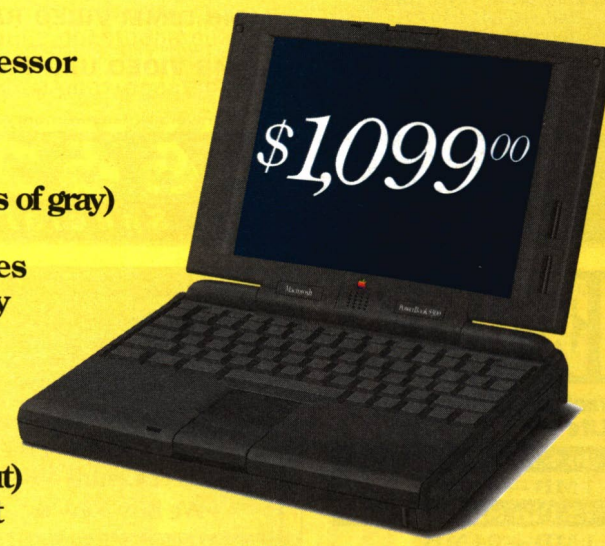
* USED *

Mac Plus	No Kbd or Mouse	$99.00
Mac SE (800K)	1/0	$199.00
Mac II	4/0	$199.00
Mac II	4/40	$225.00
Mac IICX	4/80	$325.00
Mac LC	2/40	$299.00
Mac LC II	4/80	$375.00
Mac IISI	5/80	$349.00
Mac IISI	5/160	$379.00
Mac IICI	4/80	$395.00
Mac IIVX	4/80	$549.00
PowerBook 520	4/160	$879.00
Apple Powerbooks	From	$449.00
Duo 210	4/80	$599.00
Duo 230	4/80	$749.00
Duo Docks	From	$349.00
Pwr Mac 6100/60	8/350	$925.00
Centris 650	4/230	$699.00
Quadra 650	8/230	$1199.00
Quadra 700	4/80	$699.00
Quadra 800	8/500	$1125.00
Performa 600	5/80/CD	$649.00
Apple 8 Bit Video Cards		$85.00
Apple 13" RGB Display		$250.00
Apple 14" Color Display		$350.00
Apple 16" RGB Display		$649.00
Apple 17" MultiScan Display		$799.00
Performa Display		$179.00
Apple PowerCD		$149.00
Stylewriter		$129.00
Portable Stylewriter		$199.00
ImageWriter II		$199.00
Personal Laserwriter LS		$279.00
Laserwriter Select 300		$299.00
Apple OneScanner		$249.00
Apple Ext. SuperDrive (1.44MB)		$149.00
Apple Extended II Kbd		$95.00
Duo Battery Recharger		$45.00
PowerBook Battery Recharger		$35.00
PowerBook AC Adapters		$39.00
Apple 5.25" Drive (LC/IIe)		$79.00
Din 8 Cable (CPU to ImageWriter II)		$5.00
Apple EtherNet & Network Cards		Call

(Performa's Are CPU Only)
(Other Configurations Available)

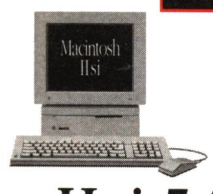
Macintosh PowerBook 5300/100
• Brand New In Box - 8/500 •

FEATURES:
- 100-MHz PowerPC 603e RISC processor
- 8MB RAM, expandable to 64MB
- 500MB internal hard drive
- Bright 9.5" passive matrix grayscale screen (640 x 480 16 levels of gray)
- Two PCMCIA Card slots & expansion bay for third-party devices
- 2.5 to 4 hour lithium-hydride battery
- Built-in infrared technology
- Light Weight: 5.9 lbs
- PowerBook Mobility Bundle & eWorld software
- 16-bit CD-quality stereo sound (in/out)
- 8-bit (upgradable) color video output (supports external displays)
- Built-in speaker & integrated microphone
- Built-in, removable Apple 1.4MB floppy disk drive
- LocalTalk/serial, SCSI, ADB, audio in/out & video out ports



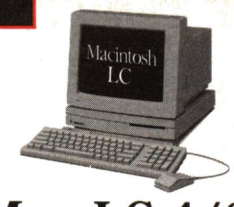
*Accessories available

* USED SYSTEM SPECIALS *



Mac IIsi 5/80
Complete Color System
W/Apple Color Monitor & Kbd.
►$599.00◄

Mac II ci 4/80
Complete Color System
W/Apple Color Monitor & Kbd.
►$679.00◄



Mac LC 4/80
Complete Color System
W/Apple Color Monitor & Kbd.
►$499.00◄

We Now Offer A Huge Inventory Of Parts For All Apple Products & Also Offer Extended Warranties
Visit Our Web Site At: www.getnet.com/macsale Or E-Mail Us At: macsale@getnet.com

Limited Quantities/Prices Subject To Change
Prices represent a Cash Discount - off Full Price.
Returns at discretion of Mgmt./15% Restocking fee.

1-800-729-7031

1150 W. Alameda Drive, Suite . #1 & 2
Tempe, AZ 85282
(602) 858-0900 / (602) 858-9537 (Parts)

WE WANT TO BUY YOUR NEW/USED MAC EQUIPMENT

Premier

SOURCE COMPUTING

SYSTEMS		
9500		
9500/132 0/0		$2775
9500/132 16/2/CD		$3785
9500/132 16/1/CD/VI		$3385
8500		
8500/120 0/0		$2899
8500/120 16/1.0/CD		$3365
8500/120 16/2.0/CD		$4249
7500		
7500/100 16/500/CD		$2185
7500/100 16/1.0/CD		$2345
7200		
7200/75 8/500/CD		$1085
7200/90 8/500/CD		$1375

POWERBOOKS		
5300		
5300/100	8/500	$1285
5300/100c	16/750	$3349
5300/100cs	8/500	$2049
5300/100cs	16/750	$2649
5300/100ce	32/1.1	$4799
2300		
2300/100c	8/750	$3135
2300/100	20/1.1	$4035
190		
190/66	8/500	$1285
190/66cs	4/500	$1475

Competitive Rate Program LEASING

SOURCE COMPUTING

We carry the entire Apple computer and peripheral product line as well as most popular third party brand products at ultra-competitive prices with free technical support on everything we sell. MOST items are IN STOCK with same day shipping available on orders placed before 3 pm E.S.T. Custom configurations are No problem!

!!! OPEN 365 DAYS A YEAR !!!

(800) 900-4599

Voice 305/725-9777 • Fax 305/725-9977

http://www.sourcecomp.com

VISA MasterCard FedEx Federal Express American Express Cards NOVUS

$$$$$$$ MEMORY WHOLESALERS $$$$$$$

SIMMs			DIMMs		
4 MB	72/70	$69	4 MB	168/70	$119
8 MB	72/70	$139	8 MB	168/70	$159
16 MB	72/70	$269	16 MB	168/70	$289
32 MB	72/70	$579	32 MB	168/70	$589
			64 MB	168/70	$1179

LIFETIME WARRANTY

PB RAM / ALL MODELS!!!
4 - 64 MB.....$$$CALL$$$

L2 CACHE
256k - 61XX/71XX/81XX.....$99
256k - 72XX/75XX/85XX.....$125
512k - 72XX/75XX/85XX.....$175

VRAM
1MB DIMM - 72XX/75XX/85XX.....$59
512k SIMM - 61XX/71XX/81XX.....$29

MAC MEMORY

Best Quality Lowest Price Memory

LIFETIME GUARANTEE

30 PIN SIMMs 1MB/2MB/4MB/8MB/16MB
72 PIN SIMMs 4MB/8MB/16MB/32MB
168 PIN DIMMs 4MB/8MB/16MB/32MB/64MB
ALL POWER BOOKs 2MB-36MB
1MB DIMM VIDEO RAM 9500/8500/7500 Series
2MB VIDEO UPGRADE 9500/8500/7500 Series

VIDEO RAM 256K/512K
POWER MAC CACHE 256K/512K/1024K
DIMM CACHE 256K/512K/1024K
MEMORY FOR ALL PRINTERS
FPU & PROCESSORs
68040 Processor w/FPU 25MHz
68040 Processor w/FPU 33MHz
68882 FPU 25MHz /33MHz

DMS
Data Memory Systems Inc.
24 Keewaydin Drive unit 5
Salem, NH 03079
Tel. 603-898-7750
Fax 603 898 6585
www.datamem.com/datamem

DISCOVER NOVUS MasterCard VISA

University, Government and Corporate P.O.'s with Approved Credit

1-800-662-7466

Memory Upgrade Specialists Since 1987

MEMORY

NEW MEMORY • WE DO NOT USE OR BUY OLD CHIPS
LIFETIME WARRANTY • LOWEST PRICES • ALL NEW

30 pin SIMMs	72 pin SIMMs	168 pin DIMMs
1 MB / 4 MB	4 MB / 8 MB / 16 MB / 32 MB	8 MB / 16 MB / 32 MB
$20 / $79	$79 / $169 / $329 / $689	$179 / $319 / $699

800.544.6082 ext 66

OUR CUSTOMER SERVICE IS QUICK & NEVER DISCOUNTED

415.929.1578 - fax
1592 Union Street #91
San Francisco, CA 94123

BOSS Micro Electronics

WE ONLY SELL NEW MEMORY

MEMORY

Guaranteed Lowest Prices
Life Time Warranty

- 30 Pin SIMMS
- 1MB—16MB
- 72 Pin SIMMS
- 1MB—64MB
- 72 Pin EDO
- 4MB—64MB
- All Note Books
- All Printers
- VRAM, DIMM, CACHE

WE BUY MEMORY

We accept P.O.'s from government, schools & qualified firms.

Eritech International
1-800-808-6242
818-244-6242 818-502-5059

Diamond Computer Resources, Inc.

Standard & New 72 Pin SIMM's
PowerBook Memory
Quadra & Centris VRAM
We Buy New & Used SIMM's

16MB 72 PIN.... CALL
4X8 30 PIN.....$119

LifetimeWarranty MC/Visa No Surcharge
Corp.,Gov.&Univ.PO's Accepted
Fax 512-219-1132

800-541-7126

13377 Pond Springs R., Ste 105
Austin, TX 78729 • 512-219-1222

WANTED: Used Memory

TOP $$$ PAID
256K-64Mb

BLOWOUT SALE—WOW!!
4 x 8 4mb 30 pin SIMM $80
8mb PowerBook 500 Memory $175

We Buy Macs
New & Used Memory Available

(800)80-WE-BUY

MAC Solutions
1416 WILSHIRE BLVD. SANTA MONICA, CA 90403
(310) 394-0001 fax: (310) 394-7744

Memory Wanted

WE BUY NEW OR USED
SIMMS

256K, 512K, 1MB, 2MB, 4MB, 8MB, 16MB, 32MB.

30 Pin, 64 Pin or 72 Pin.

POWERBOOK 2MB - 28MB

We Buy In Quantity. Call Us or Send Fax.
INNOVATIVE MICRO PRODUCTS, INC.
7631 Leesburg Pike, Suite A
Falls Church, Virginia 22043
Tel.: 703-848-0711 Fax: 703-848-0712

Need Memory?

at competitive prices

We stock:
Simms - 30, 72 Pin
Dimms - 168 Pin
Powerbook Memory
DRAM-VRAM

For memory products at a price that's right, call us at Starlight!

STARLIGHT TECHNOLOGY, INC.
Tel (407) 334-7979
FAX (407) 334-3439

MasterCard VISA

APPLE MONITORS

SPECIAL!!! APPLE 17" 1710AV COLOR $999.00

APPLEVISION AV	17"	MON	$999
APPLE 1705	17"	MON	$799
APPLE 1710 MS	17"	MON	$899
APPLEMLTISCN	20"	MON	$1899
APPLE MS	15"	MON	$369
APPLE MS	14"	MON	$329

APPLE HARD DRIVES

ON SALE!!! 1 gig External $319.00

APPLE	730MB	11ms	$189
APPLE	1000MB	9.8ms	$259
APPLE	2000MB	8ms	$689
SGATE	4000MB	8.5ms	$999
SGATE	2000MB	8.5ms	$659

Add $75 for external version, includes terminator & 25-50pin scsi cable

GRAPHIC CARDS

SPECIAL PURCHASE!!! APPLE AV CARDS $369.00

ATI 2MB XCLAIM PCI		$349
ATI 4MB XCLAIM PCI		$439
RADIUS 30/1600 PCI		$1189
RADIUS 30/1152 PCI		$799
RADIUS/C 30/1600 PCI		$1989

MEMORY PRODUCTS

DIMMS PCI MACS

8MB 2K 0164	$169
16Mb 2k 0264	$279
32MB 2K 0464	$599
64MB 2K 0864	$1099

L2 CACHE PCI MACS
256K-$129
512K-$189

VRAM PCI MACS
1MB-$79
2MB ATI Upgrade $189

MEMORY CARRIES LIFETIME WARRANTY Kingston TECHNOLOGY CORPORATION
WE BUY MEMORY
POWERBOOK MEMORY CALL

72PIN SIMMS

4MB 2K 0132	$ 69
8MB 2K 0232	$149
16Mb 2k 0432	$269
32MB 2K 0832	$599

L2 CACHE PPC MACS
256K-$ 89
512K-$179

VRAM PPC & 040 MACS
256K-$20
512K-$30

800-914-MACS

InterMac Technologies • 8725 Sunset Road • Niles • IL 60714

Service/Tech (847) 696-3434 • Fax (847) 518-8856 Open 7 Days 9am-9pm CMT. Returns are subject to 15% restocking fee. No returns without RMA. Credit Cards are verified to prevent fraud. Call for volume discounts. Dealer & Reseller enquires welcome. Corp/Govt. Po's accepted subject to credit approval. Prices are cash discounted 5% for COD/Cashiers Check and can change without notice.

E-Mail InterMac@aol.com Internet http://www.imac.com

POWER MACINTOSH

9500/120 16/1GIG/CD $2,799.00

9500/132	16/1gig/CDV		$3399
9500/132	16/2gig/CDV		$3799
9500/120	**16/1gig/CDV**		**$2799**
8500/120	16/1gig/CD		$3199
7500/100	16/1gig/CD		$2399
7200/ 90	16/ 500/CD		$1499
7200/ 75	8/ 500/CD		$1069

APPLE POWERBOOKS

5300ce/117Mhz 32/1.1gig $4,699.00

5300ce/117	32/1.1		$4699
5300c /100	16/750		$3499
5300cs/100	8/500		$2299
5300/100	8/500		$1699
190cs/66	4/500		$1699

APPLE PRINTERS

SPECIAL PURCHASE!!! SELECT 360 $1,099.00

LASER/W	SELCT. 360	$1099
LASER/W	4/600	$ 799
STYLE/W	2400	$ 379
STYLE/W	2200	$ 369
STYLE/W	1200	$ 249

IMPACT

Nine out of ten MacWEEK subscribers look at these ads!

ADVERTISE HERE, WHERE MAC VOLUME BUYERS BUY DIRECT!
CALL 800-825-4237

Source: 1994 MacWEEK Marketplace Subscriber Study

Infinity Micro

Apple · UMAX · Hewlett Packard · GCC Technologies · Seagate · DayStar

One stop shopping for all your software & hardware needs!

•Lease Available! 800 · 589 · 1234 "Custom Configuration Specialists"

Tel: 310•470•9426
Fax: 310•470•4956
2289 Westwood Bl. LA, CA 90064

Dealers & International orders welcome.

•Fax us for Best Quotes!

POWERMACS		POWERBOOKS	
6100/66 8/500/CD	1075.	150 8/240	935.
7100/80 8/700/CD	1275.	520 4/240Mono	945.
7100/80 AV 16/700/CD	1795.	520C 4/240	1295.
8100/100 8/700 CD	2145.	540C 4/320	2295.
8100/100AV 16/1G/CD	2795.	190 8/500	1295.
8100/110 16/2GIG/CD	2895.	190CS 8/500	1875.
7200/75 8/500/CD	1085.	5300 8/500	1185.
7200/90 8/500/CD	1295.	5300CS 8/500	1945.
7500/100 16/1GIG/CD	2375.	5300CS 16/750	2545.
8500/120 16/1GIG/CD	3195.	5300C 8/500	2845.
8500/120 16/2GIG/CD	3585.	5300C 16/750	3245.
9500/120 16/1GIG/CD	2785.	5300CE 32/1GIG	4695.
9500/132 16/1GIG/CD	3385.	G.V. Platinum Pro	485.
9500/132 16/2GIGCDV	3685.	PERFORMA	
PRINTERS		550 5/160/CD w/ 14"	775.
Stylewriter 1200	199.	575 5/160/CD w/14"	895.
Stylewriter 2400	299.	578 8/250/CD	1099.
Personal Laserwriter 300	395.	630 8/250 CD,14"	895.
Pamasonic 300dpi Laser	299.	635 5/250/CD w/ 15"	995.
Laserwriter 4/600	685.	637 5/700/CD w/ 15"	995.
Laserwriter 360/Toner	1085.	638 8/350/CD w/ 15"	1275.
Laserwriter 16/600	2045.	6115 8/350CD,15"	1195.
Color Laser 12/600PS	2495.	6200 16/1Gig/CD	1485.
		6300 16/1.2Gig/CD	2269.
		5215 8/1GIG/CD	$ 1395.

PowerBook 520 4/240 $ 945.

PowerBook 150 8/240 $ 935.

Aldus Pagemaker Ver. 4.2 $99.

PANASONIC $299. 300dpi Post Script L.2

AdobePhotoshop 3.01 P.M. $299.

radius MONITORS

PrecisionColor 17	775.
PrecisionColor 21	1475.
PrecisionView 17	875.
Multiview 21"	1695.
PressView 17 SR	1875.
Intellicolor 20e	1445.
SuperMatch21TXL	1795.
PressView 21T/Calib.	1995.
PressView 21SR	3095.

VIDEO CARDS

PrecisionColor 8/1600	459
Thunder IV GX Cards	CALL
Thunder/30-1152	795.
Thunder/30-1600	1145.
Thunder Color/30-1152	1545.
Thunder Color/30-1600	1885.
Thunder 24GT Card	689.
VideoVision Studio 2.0	2345.
TrueVision Targa 2000	3395.

LARGEST WEST COAST INDEPENDENT Apple RESELLER, PARTS & SYSTEMS

ASK ABOUT OUR BUSINESS LEASING

iCN

INNOVATIVE COMPUTER & NETWORKING INC.

UGRADE YOUR PB500 TO POWERMAC 603 PROCESSOR $789 + $40 LABOR

BUNDLE 9500/132 16/1GB/CD/ATI Apple 20" Ref. Monitor+KB **$4590**

BUNDLE 9500/120 16/1GB/CD/ATI Apple 1705 Monitor + Ext. Key **$3690**

132Mhz 8500 16/1GB/CD **$3590**

120Mhz 8500 16/1GB/CD - D **$2850**

POWERMAC

9500/132 16/1G/CD	$3389
9500/120 16/1G/CD/ATI	$2887
8500/120 16/1G/CD	$2990
7500/100 16/1G/CD	$2289
7200/90 16/500/CD	$1490
7200/75 8/500/CD	$1099
8100/110/100	CALL
7100,6100	CALL

POWERMAC UPGRADE With Orinigal Apple Logic Board & Parts

Q800*, Q840AV & 8100s to 8500/120/132	$1650-1979
Q900, Q950 to 9150/120 WGS	$1690
C610, Q610, Q660 to 6100/60	$790

DEMO

8500/132 16/1G/CD	$3349
Q950 8/500/CD	$1125
Q800 8/230/CD	$915
Q840AV 8/230/CD	$1029
Q650 8/230/CD	$945
IIci 4/80	$395
IIfx 4/80	$425
Perf 400 4/80	$299

ORIGINAL APPLE PART

9500 LogicBoard	$1250
8500 LogicBoard	$790
8100/110 LogicBoard	$1450
120Mhz DoughterBoard	$790
132Mhz DoughterBoard	$1250

MONITOR

14" Performa Color Plus	$289
APLLE 14" Multi	$295
APLLE 15" Multi	$349
APLLE 1705 17" Multi	$695
APLLE 1710Vision Multi	$849
APLLE 20" Multi-R	$1395
NEC 15XV Plus	$485
NEC 17XV Plus	$788
SONY 15SF2	$469
SONY 17SF2	$839

PRINTER

APLLE LW 4/600	$799
APLLE LW Select 360	$1099
APLLE LW 16/600	$2095
APLLE SW 1200	$189
APLLE SW 2400	$299

GCC PRINTER

XL608 600dpi/8ppm/11x17	$2399
XL808 800dpi/16ppm/11x17	$3199
XL616 600dpi/16ppm/11x17	$2699
XL1208 SuperSize 1200/8/12x20	$6399

ATTO Technology NuBus/PCI SCSI-2 Fast/Wide Accelerators

ExpressPCI Single Channel	$269
ExpressPCI Dual Channel	$699
SiliconExpress IV NuBus	$779
ExpressStripe Raid-0 PCI	$329

TRADE IN YOUR OLD MAC FOR A NEW MAC

POWERBOOK

GLOBAL VILLAGE Platinum ProPC	$489
5300ce 32/1.1GB	$4699
5300cs 16/750	$2449
5300cs 8/500	$1880
190cs 4/500	$1495
540c 4/320-R	$2190
520 4/160-R	$875
520 4/240	$1097
Duo230	CALL
150 8/240	$880

PERFORMA

5215 8/1G/CD/Mod/15"Man/KB	$1490
6116 8/700/CD/Mod/14"Man/KB	$1399
6220 16/1G/CD/Mod/TV-V/KB	$1739
6300 16/1G/CD/Mod/15"Man/KB	$2349

PERIPHERAL

SyQuest EZ135	$229
NEC 6X-Speed CD-ROM Drive Enter.	$497
BEST DATA 604 Processor Card	$197
UMAX Vista S6 w/Full Photo	$639
UMAX Vista S8 w/Full Photo	$749
AGFA StudioScan IIsi	$847
AGFA Arcus II w/Full Photo	$1897
PaperPort Vx By Visioneer	$357

D: Demo

Performa 6200 5200 8/800/4x-CD Built-in 14" Monitor & Kybrd **$1299**

Performa 6200 6200 8/800/4x-CD 15" Monitor/Modem/Kybrd **$1399**

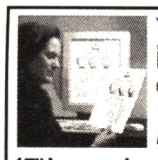
PowerBook 5300c 16/750 **$3089**

PowerBook 5300 8/500 **$1099**

• Prices Subject to Change Without Prior Notice • • All Prices Reflect 3% Cash Discount •

FOR TECHNICAL INFO. AND THE MOST RECENT PRICING VISIT OUR WEB SITE AT
Internet: http://www.icni.com
Email: icn@icni.com

310-445-6600
FAX: 310-445-6611
2045-B S. Barrington Ave., LA, CA 90025 • Mon-Fri 8am-5pm PST



You deserve it. Now you can afford it.

The Pivot 1700 from Portrait Display Labs

17" Impression 1024x768	$659
17" Sony 17SF1 Trinitron	$799
17" Sony 17SE1 Trinitron	$999
17" Pivot 1700 .26	$999
19" Multiscan 1280x1024 .31	$999
20" Multiscan 1600x1200 .28	$1199
20" Philips Trinitron (R)	$1399
20" Sony 20SE1 Trinitron	$1899
21" Philips 2130 .28 (R)	$1999

RAPIData 800 316 8816 VISA MasterCard

Prices for cash sale; credit cards add 3% (R)= refurb.

Fax 916-391-8330 • Corp./govt. POs accepted

Sales Office: 14 Moses Ct., Sacramento, CA 95823

Mac·Res·Q

PB 5300C 8/500 (N) $2499!!!

510-689-9488 We Help You beat The System 510-689-9487 Fax

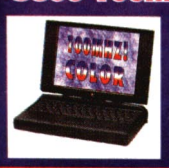
Performa 5200 8/800/4xCD w/15" (R)	$1299
PowerMac 6100/60 8/250/CD (R)	$899
PowerBook 5300cs 8/500 (N)	$2099
PowerBook Duo 280 4/240 (N)	$1399
PowerBook Duo 230 4/80 (R)	$679
Performa 630 8/250/CD w/Kbd. (R)	$799
Apple Quicktake 150 (N)	$499
Apple Stylewriter 1200 (R)	$199
Apple Color Stylewriter 2400 (N)	$325
APPLE HARD DRIVE LIQUIDATION!!	
80MB / 160MB	$55/$70
250MB / 360MB	$85/$99
Apple Manual Inject Floppy (p/n 661-0121)	$79*
Apple Auto Inject Floppy (p/n 661-0474)	$79*
APPLE POWER SUPPLY BLOWOUT!!*	
LC, II, III, Perf. 4xx, Quadra 605	$19
Quadra 900/950 / Q 800 thru PPC 8100	$199/$109
C610 thru PPC 6100 / IIcx thru PPC 7100	$59
PPC 8500/9500 / Duo Dock	$129/$79

FOR A FULL INVENTORY LIST:
WebSite: http://www.macresq.com

Qty. Disc. Available • N=New• R=Refurbished • Prices Subject To Change
*Less Than 5 Pieces Requires Exchange• H-P Authorized•Apple Service Provider

TRY OUR NEW ONLINE CATALOG! http://www.Compu-America.com

5300CE 117MHZ! 32/1.2G $4299
5300C 100MHZ! 16/750 $3099
5300CS 100MHZ! 16/750 $2679
5300CS 100MHZ! 8/500 $1949
5300 100MHZ! 8/500 $1099



- 100MHz 603e PPC CPU
- 2 PCMCIA SLOTS Standard
- NEW DESIGN, New Look
- Ion Lithium Battery
- 5 Hour Battery Life

We are OPEN Saturday!

SALES CALLS (310) 446-1771
FAX BIDS (310) 475-7744

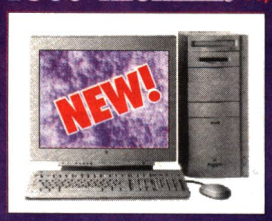
COMPU AMERICA
"The Computer Specialist"

Come see our huge showroom!

10435 Santa Monica Blvd, LA CA 90025

1-800-533-9005

9500 132MHZ! 16/1GIG/CD/2MB ATI VID $3395
9500 120MHZ! 16/1GIG/CD/2MB ATI $2795



- 132MHz CPU
- 604 RISC
- PCI BUS
- Tower Case
- Built in EtherNet
- 6 PCI Slots
- 4X CD-ROM

8500/120MHZ

- 120MHz PPC CPU
- Audio/Visual Capable
- Built in Video Capture
- Supports 24bit Color
- 3 PCI Slots
- 256K Cache

16/1GIG/4XCD $3199
16/2GIG/4XCD $3499

7500/100MHZ

- 100MHz PowerPC 601
- Upgradebale CPU
- Video In
- 3 PCI Slots
- Desktop Case
- System 7.5

16/500/4XCD $2199
16/1GIG/4XCD $2299

7200/90MHZ

- 90MHz PowerPC 601
- Up to 136MB RAM
- Built in EtherNet
- 3 PCI Slots
- Desktop Case

8/500/4XCD $1299
16/500/4XCD $1499

7200/75MHZ

- 75MHz PowerPC 601
- Up to 136MB RAM
- Built in EtherNet
- 3 PCI Slots
- Desktop Case

8/500/4XCD $1079
8/1GIG/4XCD $1295

DUO 2300C

- 100MHz PowerPC 601
- Up to 48MB RAM
- Light Weight
- Active Color
- Dockable

20/1.2G/14.4 $3995
8/750 $2995

PowerBooks

150 8/240 $899
520 4/240 $899
520C 4/160 $1199*
520C 4/240 $1299*
540C 4/320 2099*
540C 12/320/FAX 2699*

Performa 6300

- 100MHz PowerPC 603
- 15" Color Display
- Keyboard & Mouse
- $900 Software Bundle
- 28.8 FAX/MDM

16/1.2GIG/4XCD
$2299!

Performa 6220

- 75MHz PPC 603E
- 14.4 FAX/MDM
- Built in TV Card
- $900 Software Bundle
- Mouse & Keyboard!!!

16/1.2G/4XCD
$1699

Performa 5215

- 75MHz PowerPC 601
- 15" Color Display
- Keyboard & Mouse
- $900 Software Bundle
- 14.4 FAX/MDM

8/1GIG/4XCD
$1429

Performa 6200

- 75MHz PowerPC 601
- 15" Color Display
- Keyboard & Mouse
- $900 Software Bundle
- 14.4 FAX/MDM

8/1GIG/4XCD
$1499!

Performa 6116

- 66MHz PowerPC 601
- 14" Color Display
- Keyboard & Mouse
- $900 Software Bundle
- 14.4 FAX/MDM

8/700/2XCD
$1349!

Performa 638CDV

- 66MHz 68040
- 15" Color Display
- TV CARD!
- $900 Software Bundle
- 14.4 FAX/MDM

8/350/CD/TV
$999*

POWERMAC

8100/110 16/2GIG/CD	$2699
8100/100AV 16/1GIG/CD	$2699
8100/100 8/700	$1995
7100/80AV 16/700/CD	$1899
7100/80 8/700/CD	$1299
7100/80 8/500	$1199
6100/66 8/500/CD	$1099
6100/66 16/500/CD/DOS	$1599

Performa

638CDV 8/350/CD	$999*
635CD 4/250/CD	$799*
6116CD 8/700/CD	$1099*
6115CD 8/350/CD	$999*
637CD 8/350/CD	849*
631CD 8/500/CD	$899*
640CD DOS 12/500/CD	$1249*

Monitors

Sony 15SF2 / 17SF2	489/879
Sony 17SE1 / 20SE1	1099/1899
NEC 15XV/17XV	499/779
Apple MultiScan 14"	359
Apple 15" / 1710	349/929
Apple 1705 17"	729
Apple 17" 1710AV w/spkr.	999
Apple 20"	1699

Apple Printers

StyleWriter 1200	$199
StyleWriter 2200	$349
StyleWriter 2400c	$299
LW 4/600/PS	$749
LW Select 320	$599
LW Select 360	$1099
LW 16/600PS	$2099
LW 12/600/PS Clr	$5995

RADIUS

MultiView Color 21" $1499*
IntelliColor 20e $1399*
SuperMatch 20" $895*

Hewlett Packard

5MP LASER $999
4M+ LASER $1879
4MV LASER $2799
850C INKJET $489
660C INKJET $379
600 INKJET $259

All prices are cash discounted. Prices subject to change without notice. Not responsible for typos. Government, Universities, and Fortune 1000 company P.O.'s are welcome.

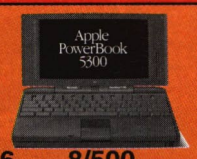
Classified

Classified

Power Macintosh

7200/75	8/500CD	$1189
7200/75	8/1GBCD	1399
7200/90	8/500CD	1359
7200/90	8/1GBCD	1549
7500/100	16/500CD	2192
7500/100	16/1GBCD	2389
7500/100	32/2GBCD	3069
8500/120	16/1GBCD	CALL
8500/120	16/2GBCD	CALL
8500/120	48/4GBCD	5039
9500/120	16/1GBCD	2869
9500/132	16/1GB/CD	3599
9500/132	16/2GBCD	CALL
6100/66	8/500CD	1079
6100/66	8/500DOS	1619

PowerBook



190/66	8/500	$1319
190CS/66	8/500	1879
5300	8/500	1219
5300CS	8/500	1999
5300CS	16/750	2469
5300C	8/500	2789
5300C	16/750	3319
5300CE	32/1.1	4799
2300C/100	8/750	3145
2300C/100	20/1.1MDM	4049

Performa

6116CD	8/700CD	1369
5215CD	8/1GB/CD	1749
6200CD	8/1GB/CD	1599
6205CD	8/1GB/28.8	1699
6218CD	16/1GBCD	2199
6220CD	16/1GB/TV	1759
6290CD	8/1.2GB14"	2039
6230CD	16/1GBMPEG	2279
6300CD	16/1.2GB15"	2288

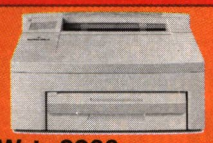
WorkGroup Srvrs

6150/66	16/700CD	$1599
8150/110	1GB/CD/AS	2899
8150/110	1GB/INRNT	2649
9150/120	16/2x1GB/AS	5819

All New!

6150/66	16/1.2gb/intrnt	2099
7250/120	16/1.2GB/CD	2669
7250/120	16/1GB/CD/AS	3389
8550/132	24/2GB/INTNT	5559
8550/132	24/2GB/CD/AS	5949
8550/132	24/2GB/DAT/AS	6929
500/132	32/CD/BASE	7599
500/150	32/2GB/DAT/CD	9494
700/150	32/1GB/CD	10335

Apple Printers



StylWrtr 2200	379
StylWrtr 2400/2500	319/Call
LsrWrtr 4/600PS	799
LsrWrtr 360 W/Tonr	1089
LsrWrtr 16/600 W/Tnr	2098
LsrWrtr 12/600Ps	5899

FOURB TECHNOLOGIES

ORDER NOW AND SAVE

1-800-946-6221

International: 310.571.0506 Fax: 310.571.0510

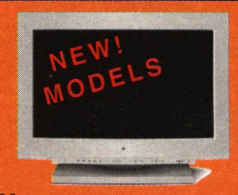
- iOMEGA ZIP 100 $189
- GLOBAL VILLAGE TELEPORT PLATINUM $195
- hp 5 MP $969
- Performa 6300CD $2288
- SONY 15sx Monitor $419
- Power Macintosh 7500/100 16/500/CD $2192
- Power Macintosh 6100/66 8/500/CD $1079
- Power Macintosh 7100/80 8/700/CD $1269
- Power Macintosh 8100/110 16/2GB/CD $2788

Apple Monitors

MltplScan 14"/15"	319/369
MltplScan 1705/1710	699/888
MltplScan 1710AV	988
MltplScan 20	1839

Gov't,Schools,Fortune 500 P.O.'s Welcome.FEDEX Next Day Avail.Visa,MC,AMAX accepted.Prices are Cash Discounted for COD Cash/Cashier Check.

SONY



15SX		419
15SF2		489
17SF2		849
17SE2	NEW!	1069
20SF2	1600X1280	1749
GDM-2000CT	NEW!	3099

NEC

XV 15/XV15+	459/489
XV 17/XV17+	739/789
XE 17/XP 17	989/1039
XE 21/XP 21	1689/1939

FOURB External Hard Disk

500MB/1GB EXT	169/329
2GB EXT. HDD	639
4GB EXT. HDD	989
9GB AV EXT. HDD	2199

WACOM

ArtPad II 4X5	119
ArtZ II 6X8	279
ArtZ II 12X12	415
ArtZ II 12X18	685

GLOBAL VILLAGE

Teleport Platinum	195
PwrPort Gold PC	168
PwrPort Platinum PC	319
PwrPort Platinum Pro	459

EPSON

ES-1000C	669
ES-1200C PRO-MAC	1129
Stylus Color II	448
Stylus Color	489
Stylus Color Pro	579

AGFA

Arcus II	1889
StudioScan	579
StudioScan IIsi	909

Nikon

CoolScan LS-10E	1299
Super CIScan 1000	1999
ScanTouch AX1200	1199

HEWLETT PACKARD

DeskWriter 600	199
DeskWriter 660C	349
DeskJet 855C Mac	499
DeskJet 1600CM	CALL
LaserJet 5MP	969
LaserJet 4M+	1869
LaserJet 4MV	2689
LaserJet 5SI MX	3729
ScanJet 4C Mac	888

GCC

Elite XL608	2199
Elite XL616	2479
Elite XL808	2789
Elite XL1280 24MB	3889
Elite XL1280 Super Size	5519

APPLE@AMAZING PRICES

HP PRINTERS, MEMORY, SOFTWARE, SCANNERS & SYQUEST.

FREE DELIVERY

NO CREDIT CARD SURCHARGES!

DISCOVER · Cards · MasterCard · VISA

MAC SPOT

1800 680-1112

FAX 305-591-4391

POWER MACS /PERFORMAS POWER BOOKS

Power Mac 9500[132] - Power Mac 8500[120]
Power Mac7500[100] - Power Mac 7200[90]
Power Mac 7200[75] - Performa 5200[75]
Performa 6200[75] - Power Book 5300[100]
Power Book 5300[100] CS - Power Book 5300[100]C

PRINTERS & ACCESSORIES

Laserwriter Color - Stylewriter 2400 Color
Laserwriter 4/600 - Apple 20" Monitor
Apple 15" Monitor - Apple Keyboard
Apple CD 600 Ext.- Geoport

SOFTWARE

PHOTOSHOP	589
STRATA STUDIO PRO	899
ILLUSTRATOR	359
PREMIERE	485
QUARK EXPRESS CD	679
MICROSOFT WORD	279
MICROSOFT OFFICE	449
MICRO. WINDOWS 2.0	259
FREE HAND	369
MINI CAD 6.0	529
PAGEMAKER 6.0	529

HP PRINTERS

Deskwriter 600	269
Deskwriter 660C	389
Desk Jet 850C	429
Laser Jet 5MP	1,059
Laser Jet 4M Plus	1,949

SyQuest

	DRIVE	CART.
88MB	208	47
200MB	383	68
270MB	383	60
EZ 135MB	208	20
ZIP - IOMEGA	199	17

SCANNERS

MICROTEK II	399
MICROTEK II HR	599
UMAX VISTA S 6	599
UMAX VISTA S 8	699

FAX

Supra Express 28.8	159
Supra Fax 28.8	209

SPECIAL OFFER!

7200[75] 8/500/CD FOR ONLY $999

7200[90] 8/500/CD FOR ONLY $1,199

MEMORY

	DIMM	SIMM
8MB	159	139
16MB	309	299
32MB	609	599
64MB	1,349	

HARDRIVES

540 MB	159
840 MB	199
1080 MB	259
2.1 GB	629
4.3 GB	989

TOTALLY FREE DELIVERY BY FedEx *FREE 2nd DAY DELIVERY - ALL RETURN SHIPMENT EXCLUDED

Lease quotes are based on a 60 months lease program, 10% buyout option at the end of the term. Other programs available.

SONY MONITORS-NEW

15" SONY MULTISCAN $349

SONY MONITORS (R)

17" SONY (R) AMEX $499
20" SONY (R) VISA PO'S $785

PCI POWER MACS

7200/75	8/500/CD	$1099
7200/90	16/500/CD	$1449
7500/100	16/1G/CD	$2249
8500/120	16/1G/CD	$3290
9500/120	16/1G/CD	$2699
6100, 7100 & 8100		CALL

POWERBOOKS/DUOS

DUO 270C 12/240M(D)	$1790
PBOOK 190CS 8/500	$1550
PBOOK 5300CS 8/500	$2040
PBOOK 540C 4/320(R)	$2749

Computer Guys

603-659-2912 FAX 659-5722

PRICES SHOW CASH DISC. & CHANGE W/O NOTICE. 15% RESTOCKING

TECHMATIX 800-777-4932

8309 LINDEN OAKS COURT.....LORTON.....VA.....22079 FAX 703-912-6643.....MONDAY - FRIDAY.....9 a.m. - 6 p.m. EST

POWERMAC

7200, 75MHZ/8/500/CD	$1319
7200, 90MHZ/8/500/CD	$1459
7500, 16/500/CD	$2359
7500, 16/1GB/CD	$2545
8500, 16/1GB/CD	$3759
8500, 16/2GB/CD	$4229
9500/132MHZ/16/1GB/CD	$4055
9500/132MHZ/16/2GB/CD	$4149

PERFORMA'S

5215CD	$1765
6116CD	$1459
6200CD	$1765
6220CD/TV	$1765
6205CD	$1859
6300CD	$2325

POWERBOOK

DUO 2300c, 8/750	$3245
DUO 2300c, 20/1.1GB	$4169
DUO 280c, 12/320/modem	$3289
PB 190, 8/500	$1315
PB 190cs, 8/500	$1879
5300cs, 8/500, DSTN	$2309
5300cs, 16/750, DSTN	$2775
5300c, 8/500, TFT	$3139
5300c, 16/750, TFT	$3695
5300ce, 32/1GB, TFT	$5545
ACCESSORIES	$CALL

WE CARRY MANY ITEMS NOT LISTED HERE.
PLEASE CALL FOR ALL YOUR MAC/IBM NEEDS

All products factory new except where stated. Pricing subject to change without notice. Please call for most current princing. No returns will be accepted without an RMA number. All RMA's subject to a restocking fee.

PRINTERS

APPLE LASERWRITER 4/600PS	$845
APPLE LASERWRITER SELECT 360	$1035
APPLE LASERWRITER 16/600PS	$2125
APPLE COLOR LASERWRITER 12/600PS	$6115
HP DESKJET 1600C/M	$1865
HP LASERJET 5MP	$985
HP LASERJET 4M+	$1879
HP LASERJET 4MV, 11X17	$2685
HP LASERJET 5SIMX	$3699
LEXMARK OPTRA R+, 1200dpi, 16ppm	$1339
LEXMARK OPTRA LXi+, 1200dpi, 16ppm	$2649
LEXMARK OPTRA C COLOR LASER	$5755
LEXMARK LOCALTALK Card	$259

EPSON

STYLUS PRO XL Color Inkjet 720dpi, 13"X19", 2-Year Warranty	$1739

VISA, MASTERCARD & DISCOVER ACCEPTED. All prices reflect a 3% Cash Discount and are subject to change without notice.

Apple · AST · COMPAQ · HEWLETT PACKARD · LEXMARK Advancing The Art Of Printing · radius

MacWorks

"Low Prices, Great Service. . . That's The Deal!"

Performa 6116* - 8/700/CD	$999
Performa 575 - 5/250/CD/14" trinitron	$1049
Performa 5200* - 8/800/4X/15"/14.4	$1299
PowerBook Duo 230* - 4/120	$729
PowerBook Duo 280 - 4/240	$1399
PowerBook 520c* - 4/240	$1299
PowerBook 5300 - 8/500	$1199
PowerBook 5300cs - 8/500	$2199
PowerBook 5300c - 8/500	$2599
80MB*/160MB* - Hard Disk Drive	$55/$70
250MB*/350MB* - Hard Disk Drive	$85/$99

800-711-8679

e-mail: sales@macworks.com

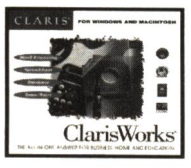
web: http://www.macworks.com/

Voice 913-642-6336 • Fax 913-642-6466

UPS Ground Shipping only $5/box with all CC orders • International Sales Welcome • Prices Subject to Change • All Prices Represent Cash Discount FedEX/DHL/UPS • * Denotes Refurbished(90-day Warranty)

Parts Trades Upgrades

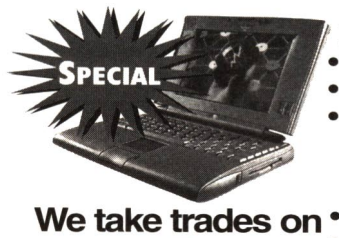
*Call 318-424-9791



$99 Bundle
- System 7.5 CD
- ClarisWorks 3.0 CD
- internal 1/2 height 160MB HD
- Global Village Bronze modem

Quadra 660AV 4/0
$649
REFURBISHED
monitor & keyboard not included

PowerBook 520 Series



PowerBook 520c
- 4/240, 25MHz LC040
- DUAL SCAN COLOR
- FACTORY REFURBISHED

$1399

PowerBook 520
- 4/240, 25MHz LC040
- GRAYSCALE DISPLAY
- FACTORY REFURBISHED

$1099

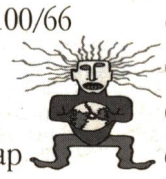
We take trades on PowerBooks! call (318) 424-9791

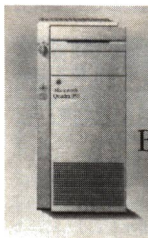
BARGAIN BASEMENT

MACINTOSH SYSTEM 7.5	**.....25/35.**
New Duo Type 1 Batteries	.....15.
IIvx Logic Board	.....249.
Newton Fax/Modem 2400	.....49.
PowerBook 140-180c keyboard	.....49.
PowerBook 140-180 A/C adapter	.....49.
Curtis Trackball Mouse new	.....39.
StyleWriter ink cartridges: 3 for	29
ImageWriter LQ ribbon	.....6.
IIsi Power Supply	.....CALL.
PowerBook Canvas Tote Case	.....19.
Quadra 660AV NuBus Adapter	.....49.
Personal NT Logic Bd.	..... 49.
Mac Plus Keyboard	..... 29.
Apple PowerCD Carrying Case	.....10.

NEW LOWER PRICING!
Macintosh Logic Board Upgrades

Personal NT to NTR printer ugprade	exchange $99
LaserWriter IINT/NTX to IIf	exchange $499 NT/399 NTX
Mac II or IIx to IIfx (with RAM swap)	exchange $299
Centris 610 to Quadra 660AV	exchange $299
Quadra 660AV TO PowerMac 6100/60	exchange $499
Quadra 800/840AV to PowerMac 8100/80	exchange $999
Quadra 800 to Quadra 840AV	exchange $299
Quadra 650 to PowerMac 7100/66	exchange $899
LC550 to LC575	exchange $499
IIvx or IIci to Centris 650	exchange $299
IIsi to Performa 630 cpu swap	exchange $399



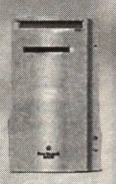


Quadra 950 8/0
$1349
Brand New! Original Packaging!
1-Year Apple Warranty

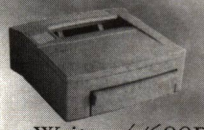
FACTORY REFURBISHED
Performa 6100
8/500 **$799**
monitor & keyboard sold separately

Save even more with a Trade In!

Quadra 840AV 0/0
$1099
refurbished



StyleWriter Pro
Trade In a StyleWriter I or II For $75 rebate!



LaserWriter 4/600PS
$679

UMAX
UC840
24-Bit Scanners

$549 NEW

includes:
•Adobe Photoshop LE®
•Wordlinx™ OCR Software

AppleDesign Powered Speakers

Apple QuickTake 100
$299

Macintosh CPUs

LCIII 4/0, no floppy or mouse	....$249.
*LC550 4/160/CD	.....$749.
*LC580 8/500/CD	.....$999.
*Performa 631 8/500/CD	.....$779.
*Performa 637 8/350/CD	.....$749.
Centris 650 4/0	.....$649.
Quadra 605 4/160 NEW	.....$679
Quadra 660AV 4/0	.....$649.
Quadra 840AV 0/0	.....$1099.
Quadra 800 8/0	.....$1099.
Quadra 950 8/500 NEW	.....$1499.
*PowerMac 6100/60 8/550/CD	....$899.
PowerMac 7100/80 8/500/CD NEW	$1399.
WGS 9150 16/1G	.....$2799.

Logic Boards

IIcx logic board	.....$199.
IIci logic board	.....$299.
IIfx logic board	.....$399.
IIvx logic board	.....$299.
Centris 650 logic board	.....$349.
Quadra 660AV logic board	.....$399.
Quadra 840AV logic board	.....$699.
PowerMac 6100/60 logic board	....$599.

Monitors

*Apple 14" AudioVision	.....$349.
*Apple 15" MultiScan	.....$349.
Apple 16" Trinitron	.....$699.
Apple 21" Color	.....$1199.
Apple Portrait Display REFURBISHED	..$329.
*Hewlett-Packard 17" with card	..$749.
*Hewlett-Packard 20" with card	..$999.
Radius PrecisionColor Pivot	....$549.
Radius TPD 19" mono	.....$399.
Radius TPD 21" mono	.....$549
Radius PrecisionColor/20	.....$1199.
Radius Color Display/21	.....$1299.
RasterOps Sweet 16	.....$599.
RasterOps GDM-1950 20"	.....$849.

$50 INSTANT REBATE on these monitors with system purchase

Cards Cards Cards

640 x 480

RasterOps 208 NEW	.....$119.

832x624

RasterOps 24Mx NEW	.....$199.
E-Machines DoubleColor LC	.....$149.

1024 x 768

E-Machines DoubleColor SX NEW	...$149.
RasterOps ClearVue/GS30 NEW	....$299.
RasterOps PaintBoard Turbo NEW	...$299.

1152 x 870

Apple 8•24	.....$229.
Apple 8•24GC NEW	.....$269.
Apple 4•8	.....$199.

PowerBook & Duo Display Adapters

E-Machines PowerLink Presentor-Duo	.$349.
SuperMac SuperView-PowerBook	..$299.

Power Macintosh Cards

8100 series AV Card	.....$499.
7100 series AV Card	.....$499.
6100 series AV Card with adapter	..$599.
PowerMac VRAM Card standard	....$299.
PowerMac DOS Compatibility Card	**CALL**

LC/Quadra 630 Card Specials

Video Expansion Card	.....CALL
TV Tuner Card	.....CALL

Printers

*Apple StyleWriter 1200	.....$219.
*Apple Color StyleWriter 2400	...$269
*Apple Personal LaserWriter LS	..$299.
Apple Personal LaserWriter 300	..$319.
Apple Personal LaserWriter NT	..$599.
Apple Personal LaserWriter NTR	.$699.
Apple LaserWriter IINT	.....$699.
Apple LaserWriter IINTX	.....$899.
Apple LaserWriter Pro 810	.....$1999.
Apple Color Printer NEW	.....$699.
Hewlett-Packard DeskWriter C	...$219.
Hewlett-Packard DeskWriter 550c	$249.

Laser toner cartridges sold separately

PowerBooks

PowerBook 520 SALE top of page!

PowerBook 170 4/80	.....$849.
PowerBook 180 4/80	.....$1199.
PowerBook 160 4/80	.....$999.
PowerBook 150 4/120	.....$849.
PowerBook 145 4/80	.....$899.
PowerBook 140 4/40	.....$749.
DuoDock Type 1	.....$399.
Duo 230 4/120	.....$699.
Duo 250 4/240	.....$999.
Duo 280 4/240	.....$1199.

We Buy, Sell & Trade PowerBooks
Call Purchasing Department
(318) 424-9791

SHREVE Systems
Celebrating 15 years in business

To Place Your Order Call:
1•800•227•3971
1200 Marshall St. • Shreveport LA 71101

VISA MasterCard AMERICAN EXPRESS DISCOVER

FAX (318) 424.9771
Customer Service (318) 424.9791
Purchasing & Information (318) 424.9791
email: ssystems@softdisk.com

Prices reflect a 2% cash discount and are subject to change without notice. Products are refurbished unless indicated as "new". Asterisk means *factory* refurbished.

Classifieds

Classified

PowerMacs

7200/75 8/500/cd	**Call**
7200/90 16/500/cd	**1449**
7500/100 16/500/cd	2279
7500/100 16/1gb/cd	**2279**
8500/120 16/1gb/cd	Call
8500/120 16/2gb/cd	Call
9500/120 16/1gb/cd	Call
9500/132 80/4gb/	Call

Performas

6116CD/60 8/700	1445
5215CD/75 8/1gb	1729
6200CD/75 8/1gb	1729
6205CD 8/1gb	1829
6220CD 16/1gb	1729
6290CD 8/1gb/28.8	1999
6300/100 CD	**2275**

Workgroup Servers

6150 16/700/cd	**1599**
6150 16/700/cd AS	**2143**
6150 16/700/cd/Inet	**1995**
8150 16/1gb/cd/AS	**2799**
8150 16/1gb/cd/DAT	**3099**
8150 16/1gb/cd/Inet	**2499**
9150 16/2gb/cd	**3949**
9150 16/2gb/cd/DAT	**4949**
9150/16/2/cd/dat/Inet	**5359**

We carry over 800 venders Call for other items

We are the Lease Experts with lowest rates and same day approval O.A.C.

Powerbooks

190/66 8/500	Call
190CS/66 8/500	Call
5300/100 8/500	Call
5300CS/100 8/500	Call
5300C/100 8/500	Call
5300C/100 16/750	Call
PB 5300ce/117 32/1g	3299
Duo 2300C 8/750	**3145**
Duo 2300C 20/1.1gb	**4039**

No reasonable offer will be declined

Apple Monitors

Multiplescan 14"	Call
Apple 15" Color	Call
Multiplescan 1705	Call
Applevision 1710	Call
Multiplescan 20"	Call

Apple Printers

Stylewriter 1200	Call
Stlyewriter 2400	Call
Port. Stylewriter 2200	Call
Laser Select 320	699
Laserwtr 4/600 PS	Call
Laser Select 360	**Call**
Col. Laserwtr 12/600	5999

**Special* Powermac 6100/66 16/500/CD/DOS $1599*

Hewlett Packard

Deshwriter 600	259
Deskwriter 340SF	**375**
Deskwriter 660C	359
Laserjet 5MP	999
Laserjet 4M Plus	1849
Deskjet 1600CM	1869
Deskjet 850C	Call
Deskjet 855C	Call
Copyjet-M (3 in 1)	**2875**
Laser 4MV 11x17	2679
Laser 5SiMX	**3699**
Scanjet 4C	**899**
Scanjet 4S	**299**
Duplex option 4M+	495

Mac Storm

In California Since 1988

(800) 594-4007

Local & Int'l Phone (310)829-9780

Local & Int'l Fax Line (310)315-1009

International & Dealer sales welcome

Prices reflect 3% cash discount and may change

WE ACCEPT VISA, M/C, AMEX, DISCOVER

MACMAIL

WITH THE LOWEST PRICE EVER

POWERMAC 7200/75•8/500/CD	$1079
POWERMAC 7200/90•16/500/CD	$1450
POWERMAC 7500/100•16/1G/CD	$2410
POWERMAC 8500/120 16/1G/CD	$3540
POWERMAC 9500/120 16/1G/CD	$2849
PRINTER APPLE COLOR SW 2400	$350
PRINTER APPLE LW 4/600 PS W/TNR	$765
PRINTER APPLE COLOR LW 12/600 W/KIT	$6110
DISPLAY APPLE 15" MULTISCAN	$359
DISPLAY APPLE 1710 MULTISCAN	$865
RASTEROPS SUPERSCAN 20"	$1380
POWERBOOK 5300 CS/100 8/500	$2140
POWERBOOK 5300 CS/100 16/750	$3420
POWERBOOK 190/66 8/500	$1315
**PERFORMA 6200 CD•8/1G	$1675
**PERFORMA 6300 CD•16/1.2G	$2450

**Prices include Monitor, Keyb., Modem &Soft.

•SE HABLA ESPANOL •Int'l Orders Welcome

•Leasing Plans •FEDEX•UPS•Etc..•Prices may change

•Prices represent cash discounts

MACMAIL VISA COD

Miami, Florida1-800-622-6844

International call (305) 639-9646

800-MAC-6844

DATA

MICRO COMPUTER INC.

800•345•1234

TEL (310) 398•3300

FAX (310) 391•2488

DEALERS & INTERNATIONAL SALES WELCOME!

• Govt, Univers.'s & Corp. P.O.'s welcome •

AGFA

Arcus $1995

Apple

Sele.300/495	
S/360 $1045.	
12/600/5895.	
16/600/2095.	
Per/320/599.	
Per/300/399.	

POWERMAC

6100/66 8/500	1045.
7100/80 8/700/CD	1295.
7200/75 8/500/CD	1095.
7200/90 16/500/CD	1395.
7500/100 16/500/CD	2240.
7500/100 16/1Gig/CD	2345.
8100/80 8/700	2150.
8100/100 16/700/CD	2585.
8100/110 16/2Gig/CD	2895.
8500/120 16/1Gig/CD	3295.
8500/120 32/4Gig/CD	4395.
9500/120 16/1Gig/CD	2850.
9500/120 32/4Gig/CD	3950.
9500/132 16/1Gig/CD	3395.
9500/132 32/4Gig/CD	4475.

POWERBOOKS

5300CE 32/1Gig	4895.
5300C 16/750	3350.
5300C 8/500	2945.
5300CS 16/750	2695.
5300CS 8/500	2045.
5300 Mono 8/500	1175.
190CS 8/500	1875.
190 8/500	1295.
540C 4/320	2495.
520C 4/160	1445.
520C 4/240	1545.
520 4/240	995.
150 4/240	895.
Full Dock	495.
Platinum pro	495.

RADIUS

15" Gray Scale	385.
15" Pivot/Gray Scale	474.
20" TPD/20GS	695.
21" TPD/21GS	777.
Precision Color/17	745.
Intellicolor Disp./ 20E	1399.
Pressview 17SR	1869.
Pressview 21T	CALL
SuperMatch 17XL	695.
SuperMatch 20 Plus	1195.
SuperMatch 21 Color	1395.
SuperMatch 21TXL	1945.
Video vision Studio	2675.

PERFORMAS

476 4/320	595.
550 5/160CD	795.
575 5/250CD	995.
578 8/320CD	1175.
5215 16/1Gig CD	1495.
630 4/250	655.
631 8/500CD	795.
635 4/250CD	695.
637 8/350CD/15"	1297.
638 TV/8/350CD15"	1352.
6200 16/1Gig/CD	1595.
6300 16/1.2Gig CD	2375.
6220TV 16/1GigCD	1899.
Centris 650 8/500	995.

SHOPPERS MARKET

"The Intelligent Choice."

PERFORMA

16	8/500 CD	1149
5215	8/1 GIG CD	1449
6200	8/1 GIG CD	1449
6205	8/1 GIG CD	1649
6290	8/1.2 GIG CD	2129
6300	16/1.2 GIG CD	2249

POWERBOOKS

OOCE	117 Mhz 32/1GIG	4649
5300CE	117 Mhz 16/1GIG	4299
5300C	100 Mhz16/750	3199
5300C	100 Mhz 8/500	2749
5300CS	100 Mhz16/750	2599
5300CS	100 Mhz16/5000	2299
5300CS	100 Mhz 8/500	1989
5300	100 Mhz 8/500	1275
DUO 2300C	100 Mhz 8/500	3299
190CS	8/500	1789
150	8/240	899
520	8/240	1049
520	12/320 modem	1699
520C	4/240	1595
520C	12/320 modem	2349
540C	4/320	2289

POWERMAC

7200/75	8/500 CD	1049
7200/75	16/1 GIG CD	1445
7200/90	16/500 CD	1249
7200/90	16/1 GIG CD	1649
7500/100	16/1 GIG CD	2299
7500/100	32/2 GIG CD	2999
8500/120	16/1 GIG CD	3199
8500/120	32/2 GIG CD	3999
8500/120	80/4 GIG CD	5449
9500/120	16/1 GIG CD	2769
9500/132	16/1 GIG CD	3399
9500/132	32/2 GIG CD	3949
9500/132	80/4 GIG CD	5649
6100/66	8/500 CD	1069
7100/80	8/700 CD	1249
8100/100	16/700 CD	2399
8100/100AV	16/1G/CD	2589
8100/110	16/2 GIG CD	2699

PRINTERS

STYLEWRITER 1200	199
STYLEWRITER COLOR 2200	349
STYLWRITER COLOR 2400	299
LASER 4/600	729
APPLE LASER SELECT 360	1099
Apple 16-600 PS	2099

POWERBOOK 5300C 16/750 $3199

RADIUS MULTIVIEW 21" $1699

PERFORMA 5200 8/800 CD $1249

POWERMAC 7100/80 AV 16/700 CD $1899

POWERBOOK 5300CS 8/500 $1989

APPLE LASER 4/600 PS $709

POWERMAC 7500/100 16/1 GIG CD $2299

TRUEVISION TARGA 2000 PRO PCI IN STOCK

1-800-463-9921

VISA, MASTERCARD, AMEX, DISCOVER ACCEPTED.

SALES (310) 842-3700

FAX (310) 842-8130

We MATCH! We BEAT! We DEAL!

10675 Washington Blvd., Culver City, CA 90232

ALL PRICES ARE CASH DISCOUNTED AND ARE SUBJECT TO CHANGE WITHOUT NOTICE

MediaGuide

BUY / SELL / TRADE

USED - *We guarantee the BEST prices!*

SE 4/20 (800K)...$159	Mac Plus 4/0.....$139
LCII 10/80...$399	Mac II 4/40 (800K)...$199
IIci 8/230.....$429	IIcx 8/80.....$349
IIfx 16/160.....$599	IIvx 8/230.....$575
Quadra 630 8/230/CD	$799
6100/60 8/230/CD	$995
PB 160 4/120....$795	PB 165 10/160...$1049
Powerbook 165c 4/120	$1099
Hard Drives (2.5", 3.5", 5.25")	$CALL
RasterOps 24STV Video In/Out Card	$395
800K floppy.....$29	1.44mb floppy.....$89

We carry parts for aging Macs — CALL

NEW

5300cs 8/500	$1899
10½-key Extended Keyboard (3yr warr.)	$45
MS Office 4.2.1 CD...$149	MS Word 5.1a...$49

SIMMs and DIMMs - $24 per megabyte!!

(303) 715-1991

e-mail: MGSales@MediaGuide.com • Fax (303) 715-1419

CALL THE MAC EXPERTS!

Our people have been designing Mac systems since 1987. We don't just sell you a box and hope you don't call back. We'll give you some advice, customize & bench-test your system, and support you before, during and after the sale. Call today and experience the PowerMax difference!

RADIUS REFURBISHED PRODUCT

All monitors are fully warranted

SuperMatch 17T Trinitron	$689
SuperMatch 20 Dual Mode Trinitron	$999
Radius IntelliColor 20e Trinitron	$1349
Radius SuperMatch 21TXL Trinitron	$1449

NEW APPLE DISPLAYS

Apple 15" Multiple Scan Display	$369
AppleVision 1710 17" Display	$898

PRINTER SPECIALS

Apple Personal Laser 300 Printer- ref	$329
Apple Color StyleWriter 2400	$369
Apple LaserWriter 4/600	$799

CUSTOMIZABLE MACINTOSH SYSTEMS

Ref Performa 637 8/350/CD	$788
Ref Performa 6115CD 8/350/CD	$888
Performa 6214CD 8/Gig/CD	$1149
PowerMac 7200/75 8 Ram/CD	$1048
PowerMac 7200/90 8 Ram/CD	$1288
PowerMac 7500/100 16 Ram/CD	$2199
PowerMac 8500/120 16 Ram/CD	$3388
PowerMac 9500/120 16 Ram/CD	$2788
PowerMac 9500/132 16 Ram/CD	$3288
Powerbook 150 4/250 Ref	$799
Powerbook 5300 GS 8/500	$1249
Powerbook 5300C 16/750	$3499

POWER MAX Knowledge is Power The Right Computer Company

800-844-3599

Fax: (503) 624-1635 Local: (503) 624-1827

Call for our free catalog!

And find us on the World Wide Web at: HTTP://WWW.Illuminatus.Com/PowerMax

This week's system special!

PowerMac 7200/90 with Apple 1705 17" Display and Ext. Keyboard.

Only $1995!* *Price after factory rebate

KELLEY COMPUTER

Surplus Liquidation Specialists

MONITOR Deals

17" Trinitron Monitors, .26 dp (R) (832 x 624 @ 75hz)	399.00
17" Hi-res. Trinitron Monitors, .26 dp (R) (1024 x 768 @ 75hz)	449.00
20" Trinitron Monitors	599.00

Weekly Specials

Int. Conner 1 GigaByte Hard Drives(N)	249.00
Ext. Conner 1 GigaByte Hard Drives(N)	279.00
SCSI Cable	15.00
1.44 FDHD, Auto-Inject (NEW)	***129.00***
1.44 FDHD, Manual-Inject (NEW)	***129.00***
1.44 FDHD, Manual-Inject Drive (Pulls)	99.00
(No Exchange required on any FDHD)	
Internal 4x CD-ROM Drives (N)	***149.00***
Apple CD-ROM Internal Mounting Kits (N)	14.75
External 4x CD-ROM Drives (N)	***179.00***
(w/CD Software and SCSI Cable)	
Third-party Extended Keyboard	49.00
(w/3-year manufacturer's warranty)	
"Stealth" ADB Black Mouse (N)	25.00
Apple Mac OS Watches (N)	***20.00***

Call or e-mail for a catalog!!

• Prices Reflect 3% Cash Discount

4323 Anthony Ct.,#1, Rocklin, CA 95677 Please Call!

916-652-1880 • 916-652-1881 FAX 800-673-6227

kelleycomp@aol.com • 71644.1716@compuserve.com

MAC FAST

1-800-829-4857

POWERMAC

7200/75 8/500/CD	$1,199
7200/90 8/500/CD	$1,399
7200/90 16/500/CD	$1,589
7500/100 16/1GB/CD	$2,579
8500/120 16/1GB/CD	$3,599
9500/120 16/1GB/CD	$2,949
9500/132 16/1GB/CDV	$3,519

PERFORMAS

5215/6200 8/1GB/4XCD	$1,499

SPECIAL OF THE WEEK

7200/75 8/500/CD

APPLE 15" MONITOR **$1,539**

DES. KEYBOARD FREE SHIPPING

INTERNATIONAL (305) 593-9221

FAX (305) 593-8921

SE HABLA ESPAÑOL

800-580-0177

Call for the lowest prices on memory.

Powermacs

7200/75 8/500CD	1199.
7200/90 8/500CD	1348.
7200/90 16/500CD	1448.
7500/100 16/500CD	2283.
7500/100 16/1G/CD	2415.
8500/120 16/1G/CD	3489.
9500/120 16/1G/CD	2895.

Performas

5215	1599.
6200	1710.

DIMMS

8MB 165.

16MB 310.

32MB 636.

(Delivered)

Free Shipping in USA

Powerbooks

190cs 8/500	1750.
5300 8/500	1265.
5300C 8/500	3100.
5300C 16/750	3650.

Call for the lowest prices on the complete line of Apple products.

All Custom configurations available.

World Micro

1-800-580-0177

1-305-716-0177

1-305-716-0277 Fax

Prices reflect a 3% cash discount and are subject to change without notice

Que Computers Buy & Sell

RAM Specials

1mb 30/64 pin	$17
4mb 30 pin	$75
4mb 72 pin	$79
8mb 72 pin	$169

Mac & Peripherals

SE 1/20,	$149	SE/30 4/80	$349
IIsi 5/80	$249	IIcx 4/80	$249
IIci 4/80	$349	IIfx 4/80	$399
Centris/Quadra 610 4/80 w/E			$499/599
Quadra 660AV 8/230CD			$999
Apple StyleWriter 1200 (new)			$219
Apple Color StyleWriter Pro (new)			$299
Apple LaserWriter 300 (Apple ref.)			$299
LaserWriter IInt/f			$399/499
Int/Ext.800k/FDHD floppy drive			$29/89
SE/Classic 25-40MHz accelerator			$49/$99

Hard Drives

2GB Seagate, 3 yr warranty $599

20mb ext. Hard Disk for Plus or SE $49

240mb ext $119, Ext. HD/CD case $39/29

540mb 2.5" internal for PB, new $179

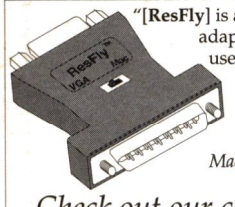
Que Computers 612-623-9144

Mac/PC, New/Used, Buy, Sell, Upgrade

2418 E. Hennepin Ave., Minneapolis, MN 55413

fax 612-623-9155 Major credit cards accepted. No extra charge

VGA to the Macs!



"[ResFly] is a $25 universal adapter that allows users to switch on the fly among all supported Mac and VGA resolutions."

MacWeek, 4/10/95

Check out our complete line of video adapters and switch kits.

Free tech support!

Free shipping!

Money-back guarantee!

MacAdapt MC Visa AmEx

(510) 525-0789 fax (510) 525-5740

http://www.macadapt.com jzjames@macadapt.com

Mac Video Adapters

Griffin Technology

Ph: 615/255-0990

Fx: 615/255-8040

820 Fesslers Pkwy.

Willow Trace, # 315

Nashville, TN 37210

Dealer and quantity discounts available.

MC Visa Amex

Mac Sync Adapter

Allows older sync on green SuperMac, Rasterops, E-Machines, Radius and most other monitors to work with the Mac's built in video.

Retail Price $40

Mac Sync II Series

Allows IIci, IIsi, MacII video, and most third party video cards to work with the new Mac and PC multiple scan monitors, including the Apple Multi Scan models.

Retail Price $28

Mac Res Adapter

Enables any Apple video resolution including on-the -fly switching. Allows Apple Multi-scan monitors to work with older Apple computers such as LC & 400 series.

Retail Price $20

Mac to VGA

Universal video adapter connects any PC monitor to your Mac or third party video card. Supports all Apple video resolutions including on-the-fly switching modes.

Retail Price $18

http://www.nashville.net/~griffin

It's no secret

Macs for less!

Macs **below** wholesale prices. Latest models, brand new factory sealed with full factory warranty. Available in all voltages Worldwide export our specialty.

Fax requirements to

202.526.6938

Heavy Duty Software Sales

CAT COMPUTER ADD-ONS

800•989•2264

Insignia Solutions Soft/Win PowerMac CD 2.0	**$249**
Adobe Pagemaker 5.0 PowerMac	**$425**
Adobe Pagemaker 6.0 PowerMac	**$479**
Adobe Photoshop 3.0 PowerMac	**$479**
Adobe Premier 4.0 PowerMac	**$399**
Adobe Persuasion 3.0	**$299**
Adobe After Effect 3.0	**$649**
Adobe Illustrator 6.0	**$379**
Macromind Director 4.0 PowerMac	**$699**
Macromind Freehand 5.5 PowerMac	**$299**
Quark Express 3.3 PowerMac	**$625**
WP 3.5 PowerMac	**$189**
Lotus 1-2-3 for PowerMac	**$279**
Canvas 3.5 PowerMac	**$279**
Microsoft Mac	**CALL**

HP MAC PRINTERS

DJ 850C	$479	HP 4MP	$699
DJ 1600CM	$1835	HP 5MP	$949
4M +	$1799	HP 4C Scanner	$890
1200 CPS $1299			

718-939-7976 • 718-886-2025 • Fax 718-939-7193

Quantum

HARD DRIVES

340MB	Fujitsu	$119
730MB	NEC	$175
850MB	Trailblazer	$199
1080MB	NEC	$229
2100MB	Capella	$675
4280MB	Atlas	$949

*Please add $59 for External Hard Drive External includes Power&SCSI Cable, Ext Terminator, Formatting Software, Installation Manual.

ENCLOSURES

Portable	$58
Zero Footprint	$58
4-Bay Case	$129
7-Bay Case	$229
Pocket Case	$29

*ALL HARD DRIVES & ENCLOSURES ARE BRAND NEW WITH 2 TO 5 YEAR MANUFACTURER'S WARRANTY. ALL HARD DRIVES COME WITH FORMATTING SOFTWARE. 30-DAY MONEY BACK GUARANTEE. UNLIMITED TOLL FREE TECHNICAL SUPPORT.
PRICES ARE SUBJECT TO CHANGE

MEMORY

1MB	1X8 80ns	$28
2MB	2X8 80ns	$55
4MB	4X8 70ns	$99
4MB	1X32 70ns	$73
8MB	2X32 70ns	$154
16MB	4X32 60ns	$299
1MB	VRAM	$69
4MB	PB5300	$139
8MB	PB5300	$255
16MB	PB5300	$499
24MB	PB5300	$761

DIMM MEMORY

8MB	$177
16MB	$359
32MB	$739
64MB	$1549
128MB	$4400

OTHER MAC STUFF

Extended Keyboard	$39
2-Year Warranty	
ADB Mouse	$19
5-Year Warranty	
Bulk Disks 50-Pack	$24
Phonet Connector	$7
Lifetime Warranty	
HDI-30 Adaptor	$19
Lifetime Warranty	
Ethernet Tranceiver	$29
Lifetime Warranty	
RAMDoubler	$54
Connectix	
QuickCam	$99
Connectix	

INTERNATIONAL ORDERS (360) 380-3999, GOVERNMENT & CORPORATE PURCHASE ORDERS ACCEPTED, NO CHARGE FOR VISA & MASTERCARD.
PRICES SUBJECT TO CHANGE

T.D. CURRAN
800-645-2533
Fax (360) 380-3900
T.D. Curran Inc.
3635 Haxton Way
Bellingham WA 98226

perisys

CURRENT PRICING

SYQUEST & OPTICAL DRIVES

Syquest 88m External	$219
Syquest 200m External	$339
Syquest 270m External	$329
Syquest Ez135 External	$219
Syquest 88m Internal	$152
Syquest 200m Internal	$292
Syquest 270m Internal	$292
Syquest Ez135 220v	$236
Iomega Zip Drives	$189
Syquest 44m Media	$39
Syquest 88m Media	$44
Syquest 105m Media	$49
Syquest 200m Media	$56
Syquest 270m Media	$52
Fujitsu 230MO House External	$469
Fujitsu Dynamo MO	$485
Olympus 230MO House External	$448
Olympus Deltis 230MO	$485
Optical Media 230M	$18

SCSI HARD DRIVES

Quantum Fb540s 12ms	$159
NEC 730mb External Only	$219
Quantum Tb 850s 14ms	$185
Conner 1060s 9ms	$239
Conner 1080s 11ms	$239
Quantum Fb1080s 12ms	$249
Quantum Fb1280s 12ms	$289
Seagate St 51080n 10.5ms	$239
Quantum Vp 2.2g 8.6ms	$595
Hewlett Packard 2.14g 9.5ms	$499
Seagate St 32550n 8ms	$725
Conner 2105s 9ms	$559
Conner 2107s 8ms	$599
Quantum Gp 4.3g 8.6ms	$899
Quantum Atlas 4.0g 8ms	$955
Conner 4207s 8ms	$928
Seagate St 15150n 8ms	$1160
Seagate St 410800n	$2050

Add $70 to any price hard drive for an External. All external drives come with a formatter, cables, and an active terminator.

ATTO RAID KITS

Pci Raid Kit Single Channel	$599
Pci Raid Kit Multi Channel	$1099

All Raid Kits include the controller, cables, and Atto Express Raid Software. The controllers can be purchased separately. Call for pricing.

CD ROM RECORDERS

Phillipps CDD 2000 Internal	$1050
Phillipps CDD 2000 External	$1125
Yamaha 102 Internal	$880
Yamaha 102 External	$999

add $175 for Toast Pro 2.5 software.

1020 Manhattan Beach Blvd. Ste.106
Manhattan Beach, CA 90255
CALL TOLL FREE
800/581-6299
For our full line of products visit us on the Web at www.perisys.com
email perisys@perisys.com
VISA MasterCard

Optical Cartridges

KYOCERA
World's Largest 3.5" MO Producer
Lifetime Warranty
$19.99 230MB
230MB Magneto Optical Disks
128MB MO Disks . . . $15.99

Memory Merchants
4 Shratton Avenue, San Carlos, CA 94070
800-799-DISK *Since 1989*
http://www.mmerchants.com

REFURBISHED/USED MACS & PERIPHERALS

Mac LC III 4/160	$349
Mac Quadra 700 4/230	$599
Mac Centris 650 8/230	$699
Mac Quadra 800 8/230	$899
PowerBook 160 8/120	$899
PowerBook 170 8/240	$949
Apple 14" Color Display	$279
LaserWriter IINT 2MB	$399

1-800-281-3661
VISA & MasterCard Accepted
Call 615-860-0109 anytime to request a fax of current products.
DataTech Remarketing, Inc.
471 Myatt Dr., Madison, TN 37115
615-860-4422 • Fax 615-860-0390

RECORD CDs

NEVER UNDERSOLD GUARANTEED

PHILIPS 2X 4X BUNDLE Write/Read
$1049
Caddyless, Fast, and Reliable
Includes:
Toast Pro Premastering Software
- Write Hybrid or Mixed-Mode CDs
- Create Audio CD's
- Archive

YAMAHA 4X MULTIMEDIA BUNDLE
$1749
Includes:
Toast Pro Premastering Software
- Write Hybrid or Mixed-Mode CDs
- Create Audio CD's
- Archive

FWB CD Toolkit
- Capture tracks from audio CDs
- Accelerate your CD Drive performance

CD-R BLANKS $6.99 Verbatim, Sony or Mitsui 74 Minute • 4X & 6X Cert.

OPTICAL BLOWOUT
128MB...$12.99
230MB...$17.99
650MB Optical ...$39.99
1.3GB Optical ...$49.99

Maxoptix 2.6 GB MO $1999

OPTIMA BLOWOUT
BEST BUY
The only CD Recorder that works like a hard drive!
$1299

iomega JAZ 1GB Removable HD
- 3.5" Removable Hard Disk Technologye
- 6.7 MB per sec. Ideal for Video

Includes (1) Cart. $599

SYQUEST CARTRIDGES
44MB...$33 • 88MB...$37
200MB...$70
105MB...$35 • 270MB...$56

CD-ROM CHANGERS
4, 7, 50, & 100 CD-ROM CHANGERS AVAILABLE
CALL FOR CURRENT PRICING

MEDIASTORE
See us at http://www.mediastore.com
800•555•5551
NEVER UNDERSOLD!
ph. 714-997-5551 • fx. 714-997-5553
VISA MasterCard AMERICAN EXPRESS

OWC

HTTP://members.aol.com/compsales/index.html

Hard Drives

		Int.	Ext.
Quantum 840mb	12ms	$195	$249
Quantum 1080mb	9.8ms	$249	$299

=3 1/2 Mice in Nov. 95 MacUser Magazine

Conner 2.1gb	9ms	$479	$529
Quantum 2.2gb	8.5ms	$599	$649
Quantum 2.1gb	8ms	$799	$849
Quantum 4.3gb	8.6ms	$939	$989

CALL FOR DRIVES NOT LISTED!

SPECIAL! Powerbook Drives:
Apple 200mb $139 $189

30-Day Money Back Guarantee on All Hds! Sys7.1 Installed & 30mb of free software. External version features platinum case with dual SCSI ports, Push-button SCSI ID, 40watt power and formatting utility.

No Surcharge! NWUS VISA MasterCard
CODs/Gov. & School POs accepted

Performa Systems

Performa 6300 System	$2399
Performa 6200 or 5215	$1399

Call For PowerBooks

MEMORY HARD DRIVES MACS & MORE!

Serving the Mac Universe since 1988

New Memory w/Lifetime Warranty

72 pin SIMMS			DIMMS	
4mb	70ns	$69	8mb	$159
8mb	70ns	$119	16mb	$269
16mb	70ns	$239	32mb	$569
32mb	70ns	$479	64mb	$1249

Level 2 Cache

for NuBus PowerMacs		for PCI	
256k	$89	256k	$89
		512k	$189

Call for PoweralMac Video & VRAM options

PowerMacs

7200/75MHz	8/500/CD	$1099
7200/90MHz	16/500/CD	$1489
7500/100MHz	16/500/CD	$2249
7500/100MHz	16/1000/CD	$2399
8500/120MHz	16/1000/CD	$3379
9500/120MHz	16/1000/CD/ATI	$2899
9500/132MHz	16/2000/CD/ATI	$3779

Custom Configurations Available

OWC Rocket
84mhz Accelerator for both PowerMac 6100s and 7100/66 $49.95

Other World Computing
224 West Judd Street
Woodstock, IL 60098
International: (815) 338-8658
Fax: (815) 338-4332
Prices and specifications subject to change without notice.
15% restocking fee on [illegible] merchandise
Unless otherwise [illegible]

800-275-4576
ILLINOIS & INTERNATIONAL:
(815) 338-8658 / FAX (815) 338-4332

HAWKE

BUSINESS SYSTEMS
Flemington, NJ 08822
(800) 875-2610
Fax - (908) 782-7027
Email - MacHawke@AOL.COM
Buy - Sell - Trade - Repair
Macintosh Computers and Peripherals

Mac Classic 4/40 w/ K & M	$399.00
Mac Classic II 4/80 w/K & M	$499.00
Mac Se/30 5/80 w/ K & M	$599.00
Quadra 900 4/0 w/ K & M	- $999.00

6 Month Parts and Labor Warranty

Mac IISi 5/80, W/ Ext KYB, Mouse & Hi Res Color Monitor	$649.00
Mac IICi 5/80, W/Cache, Ext KYB, Mouse & Hi Res Color Monitor	$749.00
Apple Hi Res Color Monitor	$239.00
Personal LaserWriter LS	- $349.00

Service & Parts for Mature Macs
New 1.44 Meg Floppies (w/t) $149.00
800 k Floppies - $39.00

New Listings... Quality Pre-Owned Macs Now On Sale!

MAC LC575 160HD 8Mb w/CD	$ 895	PowerMac 7100/66 500HD 8Mb AV w/CD	Call!
Powerbook Duo 68040/33 240HD 12Mb Color	1,495	PowerMac 8100/110 2GBHD 16Mb w/CD	Call!
Powerbook Duo 68040/66 320HD 4Mb Color	2,495	PowerMac 8100/80 500HD 16Mb AV w/CD	Call!
PowerMac 6100/60 250HD 8Mb CD	Call!	Quadra 650 68040/33 230HD 8Mb	1,195
PowerMac 6100/60 250HD 8Mb AV w/CD	Call!	Quadra 650 68040/33 500HD 8Mb w/CD	1,395
PowerMac 6100/66 500HD 8Mb CD	Call!	Quadra 660 68040/25 500HD 8Mb	995
PowerMac 7100/80 500HD 8Mb NO CD	Call!	Quadra 800 68040/33 500HD 8Mb w/CD	1,395
PowerMac 7100/80 700HD 16Mb AV w/CD	Call!	Quadra 840AV 68040/40 230HD 8Mb w/CD	1,595

1-800-431-7716

GE Capital
Computer Remarketing Services
Our Business Is Helping Yours®

AMERICAN EXPRESS MasterCard VISA

- *30-day warranty included*
- *All sales subject to availability*

Classifieds

Classified

Custom Mouspads by Moustrak

Moustrak can **customize** any imprint on our cloth or hard surface mouspads and our wristpads and coasters. Also exclusively available through Moustrak is our lines of **licensed graphic** mouspads, ask our sales staff for flyers showing the mouspads in each line. **Dealer/Distributor** inquiries encouraged.

MOUSTRAK™ Inc.
COMPUTER ACCESSORIES

Toll-Free: 800-221-6687 International: 702-884-1925 Fax: 702-884-1827 Canada: 800-668-8440

Star Trek is a Registered Trademark of Paramount Pictures ®, ™, & © 1994 Lucasfilm Ltd. © 1995 David Miller/Addi Fine Art Publishing ADVANCED DUNGEONS & DRAGONS, RAVENLOFT, FORGOTTEN REALMS, and the TSR logo are trademarks of TSR, inc. Art © TSR, inc.

Lowest Prices!

1996 Apple Prices

MAXED SYSTEMS® COMPUTER SALES

Surf the Perfect Apple Waves

ANCIENT GREEK MAC TRIVIA
How did Dickanopoulos manage to win the off road chariot race to the top of Mount Olympus?

(619) 623-1575

HOT PRICES, COOL ATTITUDES
La Jolla Rio De Janeiro Paris
•USA• •Brasil• •France•
VISA • AMEX • DISCOVER

ANSWER: USING POWERLIBRUS 5300 C FROM MAXED SYSTEMS ON OLYMPIC SPECIAL!

PPC8500 & PPC9500
Maxed Configured Assembly

PPC 8500 120 16/1/CD VRAM/Cache ..$3295.
PPC 8500 120 0/0/0 .....$2095.
PPC 8500 132 16/1/CD VRAM/Cache ..$3950.
PPC 8500 132 0/0/0 .....$2595.

Upgrade Your Old Macs!
Q840AV to 8500 .....$1595.
Q800 to 8500 .....$1795.

Apple Survival Special!
PowerBook 5300C 16/750 .....$2995.
PowerBook 5300CS 8/500 .....$1995

MEMORY
16MB DIMMS 60NS $339 256K CACHE $125
32MB DIMMS 60NS $685 512K CACHE $205
64MB DIMMS 60NS $1305

* All pricing reflects assembled units * All prices are cash prices
* Prices subject to change without notice * All sales subject to approval and availability

---

Mouse Pads

Custom Printed
• Your Logo Design
• Fast Turnaround

Plastic
Cloth

• Guaranteed Quality

MicroStore™
800-962-8885
FAX: 612-665-2604
LE SUEUR, MN 56058

Wrist Supports

BUY • SELL • TRADE

CASH FOR YOUR MAC

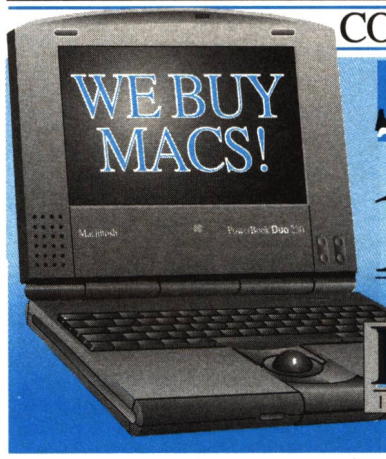
New Sales		Used Sales	
9500/120 16/1G/CD	$3395	Centris 650 4/80	$575
PB 520 4/240	$1075	Quadra 800 8/230	$999
Apple 15" Multiscan	$399	Port Stylewriter ref	$149
Apple 1705 17"	$725	Duo 230 4/80 ref	$745
Photoshop 3.0.5	$395	Apple 15" ref	$289
Laser Select 360	$1095	Mac IICi 4/230	$395

New & Used Mac Sales and Service
Corporate Customers: Ask About Our Rental Program

MAC-RENTALS
REMARKETING
1-800-756-6227
7924 Ivanhoe • La Jolla, CA 92037 • Fax: 619-454-1360

Apple II & Macintosh

COMPUTERS • PARTS • EXCHANGE REPAIRS



Specialists in used and reconditioned systems, monitors, printers & parts. Call for a free catalog.

1-800-274-5343
Int'l: 617-275-4600 FAX: 617-275-4848

Pre-Owned Electronics INCORPORATED
205 BURLINGTON ROAD, BEDFORD, MASSACHUSETTS 01730

JOIN TEAM IMMACULATE
WE PLAY FAIR
Call us
"for your best option"
Buy Sell Trade Service Part
Fast repair Memory CPU's
Complete upgades Web Pages
"We Have Everything"
Inquire about our consultant ,repair depot. and developer rates.
Visa-MasterCard-Amex-Discover

1-800-8080-MAC
WWW.EARTHLINK.NET/~IMMACULATE
PLAYS UPDATED DAILY
310-577-1791
Fax 310-577-1793
immaculate@earthlink.net

Connect to: IBM midrange & mainframe
UNIX • DEC • HP • Tandem
DG • Honeywell & other hosts

Terminal emulation solutions
VICOM MultiTerm

- 36 business emulations including 3270; 5250; Wyse 60/50; SCO ANSI; TVI 950/925; VT420/320/220; VT340/241 ReGIS; HP2392A; DG410/211; Tandem 6530; Adds VP 50;VIP7800 + 18 more
- IND$File file transfer for IBM
- Customized & remapped keyboards, menus, buttons
- Ethernet, Tokenring; Novell SAA, WallData SNA•ps, Andrew gateways supported.
- Native on Power Macintosh.
- Works with VICOM SoftRouters
- FTP Client Pro & CTB Telnet Tool also available.
- •Demo copies for evaluation available on www site.

>> The most powerful terminal emulators available <<

Vicom Technology
email: sales@vicomtech.com
Tel:1-800-818 4266
Web: www.vicomtech.com

Client / Server Solutions

VICOM Pro SDK

- Build GUIs to mainframe/mini host application & data
- Build GUIs to SQL, Sybase, Oracle, database systems
- Transition from legacy systems
- Professional development tools with compiler, project manager, debugger, datascope, GUI builder
- Powerful programming language

>> One-stop solution <<

Vicom Technology
email: sales@vicomtech.com

Internet access for your entire LAN

VICOM Internet Gateway

- Multiple Macs & PCs on a LAN can simultaneously share one internet account & IP address
- Save costs by sharing one account
- •Automatic connection with trans-parent & proxy addressing
- Modem & ISDN support
- Central control over which sites can be accessed

>> Demo copy available <<

Vicom Technology
www.vicomtech.com/vig.main

The Best Software Buys

ADOBE			
PageMaker 6.0	$470	PageMaker 5.0	$410
PhotoShop 3.04	$467	Premiere 4.0	$395
Illustrator 6.0	$479	Persuasion 3.02	$299
MICROSOFT			
Office 4.21	$Call	Word 6.01	$Call
Works 4.0	$Call	Project 4.0	$Call
MACROMEDIA			
Freehand 5.5	$299	Director 4.0	$699
Fontographer 4.1	$299	Graphic Design Studio	$615
OTHERS			
QuarkXPress 3.32	$610	Act 2.5	$148
WordPerfect 3.5	$185	Norton Utilities 3.2	$89
Sam AntiVirus 4.0	$65	Claris Draw 1.0	$240
Fractal Poser 1.0	$125	Fractal Painter 4.0	$355
Starta Studio Pro 1.75	$799	Strata Vision 3D 4.0	$399

Call for additional Software pricing

A-1-Computer Inc.
800-641-6973 Fax 718-437-5896

ISOMEDIA
2441 152nd Ave NE, Redmond, WA 98052
(206) 869-5411 • Fax (206) 869-9437

800-468-3939

CD-ROM SERVICES

Serving you Since 1991

- **Premastering and Duplication**
  Macintosh HFS, ISO 9660, Hybrid, Mixed Mode, Audio, RockRidge, MSCD or CDPLUS
- **CD-ROM Replication and Fulfillment**
  One-Offs, Short-Runs and full Replication
- **Data Conversion**
- **Quick Time and MPeg Video**
- **Scanning and Imaging Services**

Blank CDR-74 minute Media
$7.95 in volume

World Wide Web
http://www.isomedia.com

Cutters: •Sony •Yamaha •CDE100 •Pioneer
Software: •Toast •OMI •Sony •Gear •Incat

Credit Card

Authorization & Electronic Deposit Software

- Automatically authorizes and deposits all credit card sales -- individually or in batches.
- Integrate into your sales system using AppleEvents, AppleScript & import/export.

INTERNET COMMERCE READY!
MacAuthorize®
POS Credit Developers since 1981

800/483-5526 • 408/274-1110
info@tellan.com
http://www.tellan.com
Tellan Software, Inc

SELL

These ads work! 82% of those who read Marketplace ads buy off the page.

ADVERTISE HERE, WHERE MAC VOLUME BUYERS BUY DIRECT!
CALL 800-825-4237

Source: 1994 MacWEEK Marketplace Subscriber Study

DRIVE REPAIR & DATA RECOVERY

MAC, IBM, DOS,
NOVELL, UNIX, LAN, OS/2,
NT SYSTEM, SUN & TAPE DRIVE

SET-UP & CONFIGURATION NETWORK COMMUNICATIONS

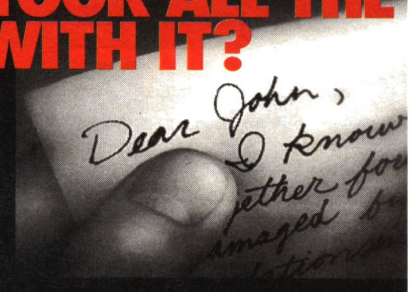
FREE ESTIMATES, LOW RATE HARD DRIVES ARE AVAILABLE.

DATA RECOVERY TECHNOLOGY
5029 Steven Creek Blvd., Santa Clara, CA 95051
PHN 408-249-1986
FAX 408-249-1987

SO, YOUR HARD DRIVE SPLIT AND TOOK ALL THE DATA WITH IT?

PROFESSIONAL DATA RECOVERY SERVICES.

HARD DRIVES, FLOPPY DRIVES, SYQUEST, EZ-135, ZIP, JAZ, OPTICAL AND BERNOULLI.
ONE-DAY SERVICE AVAILABLE.
COMPETITIVE RATES.



TOTAL RECALL
THE DATA RECOVERY COMPANY

800-743-0594
2462 WAYNOKA ROAD COLO SPRINGS, CO 80915 • 719-380-1616 • 719-380-7022 • http://usa.net/totrecal

Data Recovery

- Expertise in Macintosh & virtually every operating system & storage device - including tape & removable media.
- 24-Hour worldwide support with on-site, weekend, and priority service.
- Professional service authorized by major manufacturers.

Ontrack DATA RECOVERY
CA: 1-800-752-7557
MN: 1-800-872-2599
DC: 1-800-650-2410
International: +44 1372 741999 • Japan: 81 429 32-6365
Internet: http://www.ontrack.com

DATA RECOVERY: 800 440-1904

DriveSavers' advanced, proprietary techniques and amazing success stories have been featured on *CNN, NextStep* and *C/NET,* and have appeared in *Nation's Business, Forbes,* and *The Los Angeles Times* (to name just a few). That's because, since 1985, businesses and individuals have trusted us to recover data others said was lost forever. Just give us a call or visit our website:
www.drivesavers.com

400 Bel Marin Keys Bl., Novato, CA 94949, Voice: 415-382-2000, Fax: 415-883-0780

MAC REPAIR & UPGRADE

800-622-7977
24 HOUR SERVICE TURNAROUND
LONGER WARRANTY
FREE DIAGNOSTICS
COMPETITIVE PRICE

- Specialize in component repairs
  - -Power Mac
  - -Power Book
  - -Logic boards
- Advance Exchanges

Phone: 408-720-9899
Fax.: 408-720-9459
720 East Evelyn Ave.
Sunnyvale, CA 94086
http://www.dttservice.com

DT&T MACINTOSH SERVICES, INC.

COLOR MONITORS REPAIRED

Flat rate pricing:
RADIUS • SONY • RASTER OPS
IBM • HITACHI • MITSUBISHI

OVER 1,000 MODELS LISTED.
QUANTITY DISCOUNTS AVAILABLE

Each monitor is cleaned, adjusted to factory specs, and backed by a six month warranty on parts and labor.

For Pricing Call
800-682-5175
3E Corp. Chicopee, MA

800-WE-FIX-MACS

Component Level Macintosh Repair

Compare and Save!

- 24 Hour Turnaround
- Guaranteed Lowest Prices
- Longest Warranties
- FREE Diagnostics
- Largest Inventory of Parts
- Advance Exchanges
- Toll Free Tech Support
- Established 1989

PowerBook, LaserWriter & Radius Specialists!
Call for Complete Price List
(800) 933-4962 (408) 988-2334
2306 Walsh Ave, Santa Clara, CA 95051

HELP DESK SPECIALIST

We are an internationally known publisher of consumer magazines seeking a Helpdesk Specialist who has at least one year phone support experience. Preferred candidates will be knowledgeable in MAC windows and DOS platform, have excellent phone manner and be customer service oriented. Our helpdesk staff services 1000+ users in several locations and is very team oriented.

We offer competitive compensation and a comprehensive benefit package if interested please send resume and salary requirements to:

H. Gaudio
350 Madison Ave. 8th Floor
New York, NY 10017
FAX: 212-880-8086

EOE M/F/H/V

Sales Development Manager

Ziff-Davis Publishing, an award winning computer magazine company, currently has an exciting full-time opportunity within the Macintosh Publications Group (MacWEEK and MacUser) located in Foster City, CA. In this strategic role, you will work closely with ad sales/marketing management to identify business opportunities and create dynamic sales tools and presentations. You will develop sales aids and fact sheets from research studies, editorial analyses, and circulation analyses. Additionally, you'll work with marketing research mgnt. to coordinate the presentation of primary and syndicated research as well as disseminate all relevant computer market information to field sales reps. Contribution to special events will also be key. To qualify, you will need a BA/BS or equivalent and have a minimum of 2-5 years of experience in a sales-driven marketing department. Analytical and creative thinking is a must.

We offer an excellent benefits package including full medical and dental coverage. For immediate consideration please send your resume, including salary history to:

Ziff-Davis Publishing Co.
Human Resources, Dept. KC-SDM, 950
Tower Lane, 14th floor, Foster City, CA 94404.
Or Fax 415-578-7509 E-Mail address: kcavanaugh@zd.com
EOE

BUYERS

Marketplace readers are buyers. 77% of them bought hardware from a Marketplace ad in the last twelve months.

ADVERTISE HERE, WHERE MAC VOLUME BUYERS BUY DIRECT!
CALL 800-825-4237

Source: 1994 MacWEEK Marketplace Subscriber Study

CD-ROM PRODUCTION

CALL US FOR COMPREHENSIVE, QUALITY SERVICE:

- PREMASTERING • ONE-OFFS
- MASTERING AND DUPLICATION
- PACKAGING

DESKTOP CD RECORDERS

Sony 2x, Toast	$999
Yamaha 4x, Toast	$1599

We use our own products and service and support them too!

CATALOGIC 2685 Marine Way • Mtn View, CA 94043
Telephone: 415-961-4649
Fax: 415-962-5333
Internet: sales@catalogic.com
800-255-4020

DATA RECOVERY IN HOURS.

- Over 10 years of experience with clients worldwide including Apple, NASA, & FedEx.
- We've recovered more than half-a-million megabytes of Mac data alone.
- You only pay when there's a recovery.
- Express One-Day Service is available.
- Call 24 hours a day.

LAZARUS DATA RECOVERY
Working at the speed of business.
800-341-DATA
415-495-5556 • FAX 415-495-5553 • RESTRICTIONS MAY APPLY
381 Clementina Street • San Francisco, California 94103

Macintosh Software Developers

We provide staffing services to companies developing commercial software products. Our focus is on R&D jobs for software engineers, SQA, marketing, hardware design, engineering management, etc. We're wired into the Mac development community.

Software developers register with Scientific Placement by providing a resumé that is retained in our database. They are then notified whenever a job search overlaps their qualifications and interests. We monitor certain job markets nationally and over the long term.

Interested employers are invited to inquire about our services. Developers wishing to register should send a resumé and call or eMail for a marketability assessment. Our charges are contingent upon a successful placement and are employer paid.

Scientific Placement, Inc.
http://www.scientific.com
800-231-5920 800-757-9003 (FAX) eMail: das@scientific.com
Houston: Box19949, Houston, TX 77224 713-496-6100 Fax 713-496-0373
Silicon Valley: Box 71, San Ramon, CA 94583 510-733-6168 eMail: Beth@spica.bdt.com
Boston: Kenmore Station, Box 15225, Boston, MA 02215 617-424-8372 eMail: jen@spbos.pn.com
Austin: Box 202676, Austin, TX 78720-2676, 512-260-0123 eMail: lej@zilker.net
eWorld: spi, AOL: davesmall, AppleLink: D1580, Compuserve: 71250,3001

LERP

From Page 1

commonly available Intel-standard PC video controllers from at least one major PC video board maker.

The LERP ROM will be more flexible than current Mac versions. Sources said it will gracefully look for alternatives if required hardware, such as a floppy drive, is missing.

LERP will also let vendors customize Mac hardware designs. Sources said LERP boards will be based on the LPX form factor commonly used for PC clones. LPX designs offer several configuration options, such as slots mounted on a riser card.

Insiders said LERP will widen the field for potential Mac licensees. "A clone maker won't need a lot of Mac expertise to get into the market with LERP," said a vendor familiar with the platform.

While declining to provide any specifics, Apple said LERP is a "project under consideration" and that it represents an intermediate stage between current Mac designs, which are difficult to produce, and the open PPCP standard.

In addition, sources said some inside Apple's top brass believe the project may dilute its PPCP effort. While the LERP version of the ROM shares many elements of its multiple-OS cousin, LERP could be nixed if it cannot come to fruition quickly.

However, LERP could develop a life of its own, sources said. While initial PPCP designs may prove costly because of features aimed at higher-end markets, without PPCP's cross-platform considerations LERP should prove a low-cost path to inexpensive Macs. Sources said prices for LERP systems should start below $1,000.

While some clone vendors will look to offer bare-bones systems, especially in cost-sensitive markets such as China, others will provide a wider range of features such as expanded I/O ports. "The cost savings won't be earthshaking, but [LERP] gives a lot of room to experiment," a developer said.

Analysts said they hoped the new platform would heat up the somewhat lukewarm Mac OS licensing results, and help third-party vendors become less dependent on Apple's engineering resources. "Apple needs to get the [LERP] standard out and let the clone makers roll with it," said Kimball Brown, an analyst at San Jose, Calif.-based Dataquest Inc.

In other news, Apple will strengthen its Windows compatibility story with a new dual-processor Mac, sources said. Slated for release in the first quarter of 1997, the new machine's motherboard will sport both PowerPC 604e and Pentium CPUs.

Keeping the ROM team busy, the new model will feature yet another version of the Mac ROM, which will support a special logic chip that simulates PC-flavored I/O. The Pentium chip will have the same access to all of the Mac's logic-board resources, such as RAM, just as its PowerPC colleague does.

Apple declined to comment. □

PowerPC cousins: LERP and PPCP

LERP	PPCP
PowerPC 604 and 603 processors	PowerPC 604 and 603 processors
System 7.5.x, Copland	System 7.5.x, Copland, AIX, NetWare, OS/2, Solaris, Windows NT
PCI slots	PCI, support for ISA
ADB, GeoPort, LocalTalk parts; PS/2 keyboard	PC mouse and keyboard; support for ADB, GeoPort, LocalTalk, parallel ports; SoundBlaster

604e

From Page 1

rations are still under consideration, a model with 16 Mbytes of RAM, a 1.2-Gbyte hard drive, a Level 2 cache and a CD-ROM drive should cost about $2,700.

Sources said Orient Express will represent only the beginning for Macs that can run multiple operating systems. Apple plans to move its midrange and high-end Power Mac lines to PPCP as soon as mid-1997.

In addition to Orient Express, Apple will reportedly ship two multiprocessor Macs in November, marking the company's first entry into the multi-CPU market.

Sources said the company will release multiprocessor 8500 and 9500 systems, both boasting two 200-MHz PowerPC 604e chips. With 16 Mbytes of RAM, a 4-Gbyte hard drive, Level 2 cache and a CD-ROM drive, those systems will reportedly cost about $6,500 each.

Apple's new systems may compete with multiprocessor offerings expected from various Mac clone vendors, as well as currently shipping multiprocessor systems from DayStar Digital Inc. of Flowery Branch, Ga. DayStar's Genesis MP 600 uses four 150-MHz PowerPC 604 chips; pricing begins at $24,999.

In addition to multiprocessor systems, sources said Apple will also boost the speed of its single-chip Power Macs. In fact, Apple will reportedly standardize on the PowerPC 604e in all but its Performa and LC lines.

"People don't realize how big a change this'll be for Apple," said a source familiar with the new chip design. "The great thing about the 604e is its scalability." Within six months of shipping its first 604e-based Macs, Apple will reportedly be offering systems that bump processor rates up to 250 MHz.

According to sources, Apple is planning to increase the speed and storage capacity of its Power Mac line to keep it competitive with Intel-standard PCs and its own PPCP offerings.

Sources said a 166-MHz Power Mac 7200 with 16 Mbytes of RAM, a 1.2-Gbyte hard drive, a Level 2 cache and a CD-ROM will likely cost less than $2,400; a similarly configured 180-MHz 604e-based 7600 with a 2-Gbyte hard drive will cost $3,100.

An 8500 with a single 200-MHz 604e processor, 16 Mbytes of RAM, a 4-Gbyte hard drive, Level 2 cache and CD-ROM will ship for about $5,400; while a 9500 with the same equipment will run $5,500. Information about processor upgrades for older Macs was not available.

The PowerPC 604e chip (see 10.16.95, Page 1) is a faster version of the PowerPC 604.

The new version also includes twice as much on-board cache — 32 Kbytes — and system bus-clock multipliers.

Apple declined to comment. □

Truevision

From Page 1

648 by 486 pixels. The board provides S-video input and output; a $1,500 upgrade offers input and output of component video. To edit video, users need to purchase Premiere, which sells for $795 from Adobe Systems Inc. of Mountain View, Calif.

The Targa 1000 resembles Truevision's $4,995 Targa 2000 but lacks the higher-priced model's acceleration of video transitions, Super VGA controller and multiple-monitor support.

Targa 1000 beta user Elizabeth Thomas, president of San Francisco's Petrified Productions, said she felt the Targa 1000 represents a good mix of price and performance. "Digital video is so expensive," she said. "With a lot of other systems, you add it all up and the price really gets up there. That's why it's really nice to have [the Targa 1000]."

Petrified Productions is using Truevision's board to create an instructional drum video. "With the push of a button, you can control color, speed, everything," Thomas said. "It's all right there, and it's affordable. You just don't get two monitors with this one."

The Targa 1000 falls into the same price range as the Media 100 qx from Marlboro, Mass.-based Data Translation Inc., which is due in April for less than $5,000 bundled with Premiere.

Some analysts said that the Targa 1000's price is still high. "The gap between [Targa 2000's] five grand and $3,200 is not a whole lot," said Bill Caffery, analyst at Gartner Group Inc. of Stamford, Conn. "It's ... a fearsome amount of change to part with. You're still at the base of El Capitan, looking up; you still have to spend a lot more money.

"I'm sure they'll sell a lot of these boards, but they won't explode their market," Caffery said. "When you move [the price down] to three digits, you cross an invisible barrier."

Several consumer-oriented PCI video cards debuted this year that cut prices even more. They include miro Computer Products Inc.'s $1,199 miroMotion DC20, ATI Technologies' $300 XClaim MM and Diamond Multimedia Systems Inc.'s $169 Javelin AV/TV.

Truevision Inc. of Santa Clara, Calif., can be reached at (408) 562-4200 or (800) 729-2656; fax (408) 562-4065; http://www.truevision.com. □

GeoPort

From Page 1

an industry standard.

"Trying to impose a standard in the [personal computer] industry is a very expensive proposition," said Apple spokeswoman Nathalie Welch.

"To better benefit Apple customers, Apple has opted to focus on making products based on GeoPort as opposed to propagating standards. Apple is still very committed to GeoPort." Welch added that Apple still supports Versit and will consider its technologies for inclusion in future Apple products.

Sources speculated that Apple may use Intel Corp.'s Universal Serial Bus (see 05.22.95, Page 1) instead of or in addition to GeoPort on future Apple machines. "The revolution hoped for GeoPort is probably going to coalesce around FireWire [1394]," one source said.

Regardless, sources said Apple is committed to updating the speed of modem connections driven by the GeoPort. The company is reportedly working on long-awaited 28.8-Kbps software, slated for release this summer, for the GeoPort Telecom Adapter. The adapter uses the Mac's CPU and software to emulate modem functions. A PowerPC will be required for 28.8-Kbps throughput, according to sources.

For faster than 28.8-Kbps speeds, users will be able to turn to Sat-Sagem, whose $495 SPIGA has two ISDN B channels that can be combined for a maximum throughput speed of 128 Kbps. The product will work on 68020-based Macs through Power Macs; an external power supply is required for Macs lacking GeoPorts.

Although many companies sell external ISDN terminal adapters, Sat-Sagem's will be the only GeoPort-specific product on the market. Its GeoPort features allow it to achieve throughput speeds up to 128 Kbps; non-GeoPort Macs are limited to the speed of their serial port.

"[The SPIGA's] speed is much better than you can get from other [products]," said Peter Fletcher, Apple worldwide product manager for mobile communications. "Most external devices are limited by the serial port. This is the fastest you can go aside from an internal card, and it's quite inexpensive."

An NT1, a terminator that lets users connect terminal adapters directly to their ISDN line, is not included in the first SPIGA, but Sat-Sagem said a future U.S.-specific version would include a built-in NT1.

Introduced with Apple's AV Macs in mid-1993, the GeoPort serial port is said to be capable of transmission speeds up to 2 Mbps, but no currently shipping product enables communication speeds faster than 14.4 Kbps.

Apple declined to comment about USB or the 28.8-Kbps version of the GeoPort.

Sat-Sagem of Cupertino, Calif., can be reached at (408) 446-8690; fax (408) 446-9766; sat-info@satusa.com; http://www.satusa.com. □

REAL BIG COLOR®

The solution for all your digital printing needs—from color laser copier originals to 54-inch Big Color

Real Big Color® comes only from LaserMaster. And now it's available at a price that's way under par!

Now every business can afford the consistent, accurate color and photo-realistic quality that have made DisplayMaker™ Pro *The Professional's Choice* for large-format digital color printing.

The new ColorMark Software/RIP provides outstanding color, fast file processing, and other productivity features that make Big Color printing simple and efficient.

Get affordable, gorgeous, real Big Color. Call for details today!

ColorMark™ Color Management System Prints Right—First Time, Every Time℠

(800) 280-2943 DEPT. M50

LM® LASERMASTER®

The Professional's Choice®

Made with PRESSMATE FILM

Corel Optimized POWERPAGE

* Requires a dedicated Windows™ NT-compliant system.

©1996 LaserMaster Corporation. (612) 944-9330; In Europe call: (31) 2356-22000. These products incorporate the PowerPage interpreter from Pipeline Associates, Inc. Prices in U.S. dollars and valid in the U.S. only. Prices and specifications subject to change without notice. This ad was produced using PressMate™-FS chemical-free film. Contact us on the Internet at http://www.lasermaster.com

Java

From Page 1

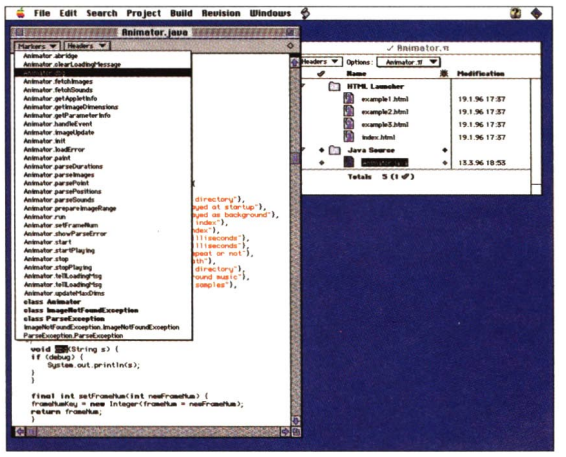
the Mac version of the standard Java classes that permit Java's portability across platforms. It can be downloaded free at http://www.javasoft.com/JDK-1.0/index.html.

Sun has not yet provided a HotJava Web browser or any Java debugging tools for the Mac, as it has for the other supported platforms, Solaris and Win32. While the lack of a browser is annoying, the missing debugging support is more serious, and Sun has not given a firm delivery date for a debugger.

Despite these hindrances, Java development is possible but rocky. You can create Java source files with any text editor. Compiling a file is easy: Just drag and drop the .java file onto the JDK javac compiler's icon. Any problems are reported in a window that lets you highlight the error with an editor.

To test an applet, you just create a stub HTML file and drag it onto the Applet Viewer. The viewer performs adequately, but in a vacuum. Since today's Java applets are to be used in a Web-page environment, the lack of a Java-capable browser for the Mac is frustrating.

Because of the JDK's lack of debugging tools, developers are stuck with the low-tech method of liberally distributing print statements throughout and running the applet to see how far it gets. This is tedious and will grate on the nerves of all but the most determined.



Symantec's Caffeine includes support for the Java language within its editor. The function pop-up is sensitive to Java functions, and the editor highlights Java keywords.

Caffeine fix

Symantec's Caffeine offers a taste of better things to come. This Power Mac-only tool is based on the Symantec Project Manager (SPM), a familiar development environment for many C/C++ programmers. SPM has been altered to support Java.

Caffeine is free for downloading to existing owners of Symantec C++ 8.0.4 at http://cafe.symantec.com/caffeine/. Others can buy C++ for $399 (or $149 for a sidegrade) and receive Caffeine upgrades as part of the subscription service. The hefty 7-Mbyte-plus download contains a Caffeine-specific version of Sun's JDK as well as a patcher that creates the Caffeine application based on an existing copy of the SPM.

Caffeine lets you add .java files to a project and compile them. Instead of a built-in compiler, Caffeine has a plug-in that talks to a Caffeine-specific version of the JDK javac compiler via Apple events.

Caffeine's main benefit over the JDK is its editing environment. The editor includes syntax-coloring support for Java, and the function pop-up understands Java definitions. Caffeine has no explicit HTML editing support, but you can include the HTML stub files in the project for easy access.

Caffeine also comes with many scripts that can save time and ease development. For example, one script will automatically invoke the Applet Viewer with an HTML stub file, so you won't have to manually drag and drop the file onto the viewer.

Applets built via Caffeine are run and tested the same way as with the JDK — sans debugger — using the Applet Viewer and trial-and-error debugging.

Conclusions

Sun's Beta 1 Java Development Kit is suitable for the resolute Mac developer courageous enough to go spelunking and learn how it all works. The lack of a well-integrated editing environment and, more importantly, debugging tools, are almost debilitating. However, the Mac version of the standard Java classes should not be overlooked as a significant piece of work; these provide the substrate upon which developers can build their own tools.

This is precisely what has happened so far. Symantec's Caffeine is an obvious upgrade for those who already own C++ 8.0.4, as it improves the editing environment while relying on Sun's own javac compiler to generate Java code.

Natural Intelligence's Roaster provides a significantly more integrated environment and includes a built-in debugger (see 02.19.96, Page 1). Unfortunately, the debugger runs only at the Java-byte code level, and it's highly unlikely that developers will want to learn the language of the Java Virtual Machine just to debug their applets.

As it stands, none of the current Mac betas offers a satisfactory collection of tools for serious Java development. The next stage must include a source-level debugger and a Web browser with integrated Java, while in the long term, fast Java compilers will become crucial, since Sun's javac is no speed demon.

Sun Microsystems Inc. of Mountain View, Calif., can be reached at (415) 960-1300 or (800) 821-4643; http://www.sun.com.

Symantec Corp. of Cupertino, Calif., can be reached at (408) 253-9600 or (800) 441-7234; fax (408) 252-4694; http://www.symantec.com. □

MAE

From Page 1

each. Version 3.0, which will be based on System 7.5, will add support for Solaris 2.5 and HP/UX 10.10, offer better integration of the Finder with the Unix file system, improve network administration, and increase client-server performance.

MAE 2.0 allows only the Finder's root file system to be mounted as a volume on Unix machines. In 3.0, individual folders can be used as volumes.

The next release will also offer new administrative features, Apple said. For example, network managers will be able to set file-access rights on Mac volumes remotely with Unix management tools.

Performance, already greatly improved in 2.0 through a dynamic-compilation emulator, will get a boost; Apple's engineers plan to eliminate bottlenecks by reducing the number of packets exchanged between the client and server.

Ken Hersey, head of the antenna and tracking section at NASA's Goddard Space Flight Center in Greenbelt, Md., said, "2.0 was a vast improvement in performance." But he acknowledged that his group, which uses X Window System terminals connected to a Sun SPARCstation 10 server, runs MAE in black-and-white mode only "because color takes up too much network traffic."

Officials at Michigan State University in East Lansing said that the next version would run faster if it were compiled with the most current tools. "We have started getting UltraSPARCs, and [MAE] performance on them is better than a Quadra 700," said Christopher Penney, the system administrator for MSU's computer science department. "However, I'm guessing it could be a lot better if it were recompiled with Sun [Microsystems Inc.]'s latest compiler. I've noticed substantial improvements when using Sun's latest compiler when compared to other compilers."

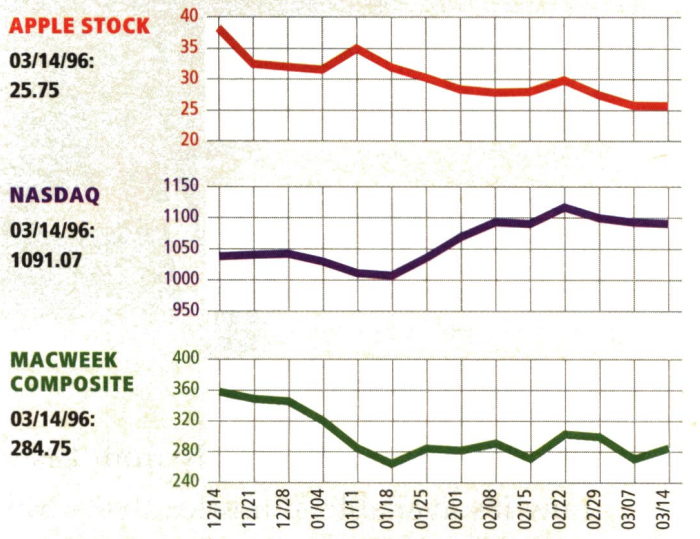
Sources said MAE's success contributed to the demise of PowerTalk (see 01.15.96, Page 16). With limited development funds, the company chose to concentrate efforts on its profitable cross-platform product rather than a money-losing proprietary mail and directory technology.

"MAE is a moneymaker with decent operating margins," said Dave Nagel, Apple senior vice president for R&D. "Every unit we sell is also a boon to third-party developers because it's another Mac desktop."

Workstation vendors said Version 2.0 bolstered their business. Don Porter, an account consultant for Hewlett-Packard Co.'s workstation division in Ft. Collins, Colo., said, "[MAE] opens doors for us that we would have to get through by other means." Eric Schmidt, chief technology officer at Mountain View, Calif.-based Sun said, "It helps us sell workstations."

MAE's popularity on Unix has prompted some inside Apple to advocate porting 3.0 to Windows NT. According to sources, pragmatists are arguing that money is to be made on an NT version. Opponents of the idea are citing the lack of cooperation with Microsoft and the inherent conflict of "supporting the Redmond machine." No decision has been made, sources said. □

StockWatch



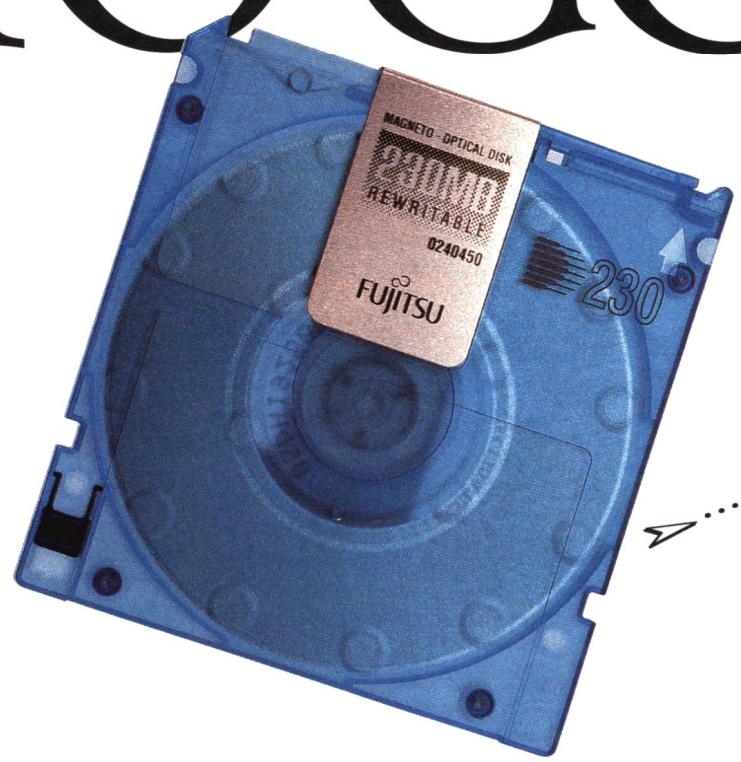
	03.14.96 CLOSE	WEEKLY CHANGE
Apple	25.75	-0.06
MacWEEK Composite*	284.75	14.48
SOFTWARE DEVELOPERS		
Adobe	34.00	1.50
Caere	7.75	0.00
CE Software	2.81	-0.31
Fractal	6.63	1.50
Graphsoft	13.25	0.00
Insignia	7.19	-0.19
Intuit	51.25	7.50
Macromedia	40.75	4.13
Microsoft	99.63	2.31
Novell	12.00	-0.50
Oracle	48.13	-1.63
Symantec	12.38	-0.19
STORAGE		
Conner	25.75	0.00
Iomega	18.88	1.81
Pinnacle	8.13	-0.50
Quantum	19.00	1.75
Seagate	57.00	0.38
SyQuest	6.50	0.56

	03.14.96 CLOSE	WEEKLY CHANGE
PERIPHERALS VENDORS		
AmeriQuest	0.88	0.06
Asanté	6.50	0.00
Focus	3.49	-0.44
Global Village	15.50	1.88
HP	95.63	2.25
QMS	5.25	0.25
Radius	1.00	0.06
Shiva	86.25	-0.75
Tektronix	33.50	-10.25
Truevision	6.69	0.00
DISTRIBUTORS		
CompUSA	49.50	7.75
IE	6.25	-0.50
Merisel	2.69	0.06
Tech Data	15.25	0.25
INDUSTRY INDICATORS		
Compaq	38.75	-0.50
IBM	116.88	-0.25
Intel	56.13	3.00
Motorola	53.88	1.50
SGI	25.13	0.25
NASDAQ	1091.07	-2.05

**The MacWEEK Composite is calculated by adding the stock prices of the following companies: Apple, Adobe, Asanté, Caere, CE Software, Global Village, Intuit, Macromedia, Radius, Shiva, SyQuest and Truevision. Source: Nordby International Inc.*

See MO go. It's 230 traveling megabytes in a 3.5-inch magneto - optical disk. Slip it into your pocket or into your Apple® PowerBook® 190 or 5300 and slip out of town.

MO TO GO.



MO. It's Fujitsu's DynaMO® 230 Portable Magneto-Optical Drive.

IMAGING MAGAZINE PRODUCT OF THE YEAR 95

Where's multimedia going next? Anywhere you want it to go. Simply slide Fujitsu's 230 megabyte *MO* drive into the expansion bay in your PowerBook or notebook PC and go.

MO is perfect for storing, transporting or backing up everything from multimedia presentations and graphics files to spreadsheets, engineering drawings and applications. All on a single reliable, rewriteable MO disk.

MO is faster and smaller than CD-ROM. It has the capacity of 160 floppies. And at less than $20 for a 230MB disk and under $500 for a drive, it's extremely affordable. *MO*. It's the floppy of the future.
And it's from Fujitsu, the world leader in magneto-optical storage.
For *MO* info, call Fujitsu Computer Products of America at 800-898-1455.

FUJITSU

COMPUTERS, COMMUNICATIONS, MICROELECTRONICS

© 1996 Fujitsu Ltd. All rights reserved. DynaMO is a registered trademark of Fujitsu Ltd. PowerBook is a registered trademark of Apple Computer, Inc.

On-line this week

ZDNet Microsoft to make Net gains?
Newly focused on the Internet, Microsoft is readying a barrage of new software and technologies. ActiveX Controls lets developers add Internet capabilities to their software and enhance their Web sites with interactive multimedia. Sounds like Netscape's plug-in architecture or OpenDoc. What will it mean for the Mac? MacWEEK Online has the story.

Other on-line exclusives
In his weekly "Off the Record" column, Mark Hall discusses the historic relationship between Apple and Sun Microsystems Inc.

Read us over the weekend
Most of each issue of MacWEEK is posted on-line Friday, so get a jump on your colleagues and read us over the weekend. On CompuServe, the MacWEEK Forum is at go zmc:macweek and the MacWEEK News menu is at go zmc:mwnews. On the Web, we're at http://www.zdnet.com/macweek/.

ZIFF-DAVIS PUBLISHING CO.
Chairman and CEO Eric Hippeau

BUSINESS MEDIA GROUP
President Ronni Sonnenberg
Executive Vice President Claude P. Sheer
VP, Magazine Networks Joseph Gillespie
VP, Central Advertising Sales Bob Bader
VP, Product Testing Mark L. Van Name
VPs Don Byrnes, Al DiGuido, Dan Farber, J. Samuel Huey, Michael Miller, Paul Somerson, Jim Stafford
Executive Director, Ziff-Davis Magazine Networks Ellen Atkinson
Managing Director of Ziff-Davis Preferred Customer Program (ZDPC) Lucy Wohltman
Directors, Ziff-Davis Magazine Networks Anne Fitzpatrick, Mark Glasner, Michael Krieger, Jeff Lehman, Kelly Lowman, Melinda Maginn
Marketing Director, Ziff-Davis Magazine Networks Michael Perkowski
Marketing Director, Ziff Davis Magazine Networks/ZDPC Jeff Bruce
Director of Public Relations Brenda Wheeler
Director of ZD Benchmark Operation Bill Catchings
Director of ZD Labs Robert W. Kane

ZIFF-DAVIS PUBLISHING CO.
President, Consumer Media Group J. Scott Briggs
President, Ziff-Davis Marketing and Development Jeff Ballowe
President, Computer Intelligence/InfoCorp Bob Brown
President, International Media Group J.B. Holston III
Senior VP, Circulation Baird Davis
VP, Assistant to the Chairman Tom McGrade
VP, Business Development T.L. Thompson
VP, Circulation Services James F. Ramaley
VP, Corporate Research and Analysis Elda Vale
VP, General Counsel and Secretary J. Malcolm Morris
VP, Human Resources Rayna Brown
VP, Chief Financial Officer Timothy C. O'Brien
VP, Planning Darryl Otte
VP, Marketing and Development Group Herbert Stern
VP, Alliance Marketing Janet Ryan
VP, Marketing Services Jim Manning
VP, Production Roger Herrmann
VP, Technology Bill Machrone
Treasurer Thomas L. Wright
Chief Information Officer Wellington Y. Chiu
Production Director Walter J. Terlecki
Director of Licensing Gertrud Borchardt
Director of Public Relations Gregory M. Jarboe

Products in this issue

ACCOUNTING
Big Software Big Business 1.0 38
Intuit QuickBooks Pro 4 38

COMPUTERS & SYSTEM SOFTWARE
Apple Apple Network Server 37
Apple Copland 82
Apple Power Mac 6300; PCI Macs; Open Transport 1.1; PowerPC 603, 603e 41
Apple Macintosh Application Environment 2.0 1, 3
Apple multiprocessor Macs; Orient Express; Power Mac 7200, 7600, 8500, 9500 1
Apple OpenDoc 27
Apple Power Mac 27
Apple Power Mac 7200/120 82
Apple PowerBook 280c, Duo 2300c 29
Apple PowerBook 540c, 5300c, 29, 30
Apple PowerBook 5300ce 35
Apple PowerPC 604e chip 1, 3
Apple System 7.5, Update 2.0 26
Bandai Pippin 4
DayStar Genesis MP 600 1
Microsoft Windows 95 18, 27
Orange Micro OrangePC Cards 4
Power Computing Power 120, PowerCurve I 37
Silicon Graphics SGI Challenge server 41

DATABASES & DATABASE TOOLS
Microsoft Visual Fox Pro 82

DESKTOP PUBLISHING & TYPOGRAPHY
Point-S CMYK Squared 2.0, ImagePoint 1.1 12

GRAPHICS SOFTWARE
Aridi Olde Worlde Ornaments I 14
Art Center clip art 14
Bit Better Screen Beans 14
FirstClass NV Tailor GX 14
Image Club Businessville, Hoopla!Cuts, Hoopla!Splash, Schoolsville, Sketches Around the World, Sketches On the Town 14
Nova Art Explosion 40,000 14
Plastic Thought 3d-Active 3-D 14
Strata StrataType 3d 2.5 12

MULTIMEDIA
Apple QuickDraw 3D 27
Apple QuickTime 26
ATI XClaim MM 1
Avid MCXpress, Media Suite Pro 12
Data Translation Media 100 qx 1
Diamond Multimedia Javelin AV/TV 1
Macromedia Director Multimedia Studio 2, Extreme 3D 29
Microsoft Active Movie 26
miro miroMotion DC20 1
Newer RenderPix board 12
Radius Thunder 3D 82
3Dlabs Glint 300SX chip, 500TX chip 12
Truevision Targa 1000, 2000 1
YARC Screamer board 12

NETWORKS
Apple PCI card for token-passing LANs 18
Shiva LanRover/PLUS, ShivOS 4.0 20

NEWTON
Apple Newton MessagePad 130 4

ON-LINE COMMUNICATIONS
Adobe PageMill, SiteMill 16
America Online America Online, Mac Client 2.7 18
Apple Apple Remote Access 2.1, 3.0; Apple Remote Access Multiport Server 18
Apple Cyberdog 27, 37
Apple GeoPort Telecom Adapter 1
AT&T WorldNet 18
Chase Research NetChaser 18
CompuServe CompuServe, MacCIM, SpryNet 18
Microsoft Internet Explorer 18
Motorola BitSurfr Pro 18
Netscape Navigator 18, 82
Netscape Navigator Personal Edition 18
RNS ISDN cards 18
Sat-Sagem Sagem-Planet ISDN GeoPort Adapter 1
Shiva WebRover 20

OPI SERVERS
Archetype InterSep 41, 42
Archetype InterSep MediaBank 41
Cops Printdesk 42
DuPont Printing & Publishing Crosfield system 41
Helios EtherShare OPI 41
Information Presentation Technologies Canopi 41
Luminous Color Central 42
Xinet FullPress 41
Xyvision Rip'n'Strip 41

POWERBOOK ACCESSORIES & UTILITITES
Newer NUpowr PowerPC upgrade for PowerBook 500 6
SanDisk FlashDisk 35
Simple Technology DataCard 35
VST PowerBook Expansion Bay Hard Disk 35

PRESENTATION HARDWARE
Sharp XG-E630U 14

PRINTERS & PRINTING TOOLS
Apple Color StyleWriter 1500, 2400, 2500; StyleWriter EtherTalk Adapter 4
CoStar LableWriter XL, XL Plus 6
Epson Stylus 1500 12
Kodak Kodak Digital Science 1000 PS 12
NewGen digital proofing system 12
QMS QMS 2425 Print System, QMS 2425Ex Print System 6

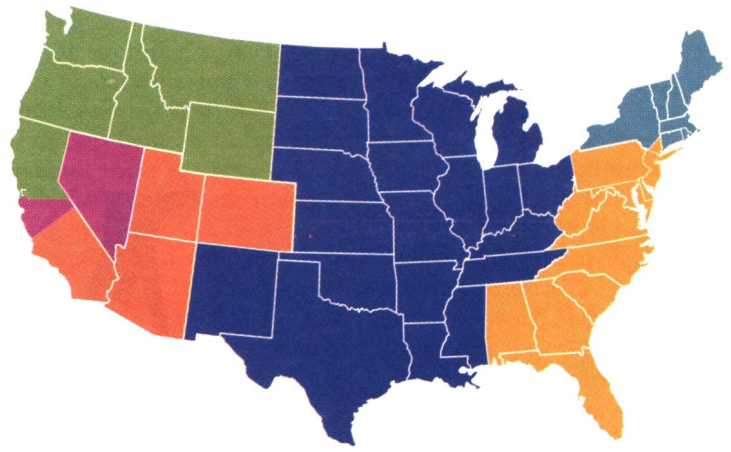
PRODUCTIVITY APPS
Microsoft Microsoft Office 4.2 41

PROGRAMMING/ DEVELOPMENT TOOLS
Natural Intelligence Roaster 1, 37
Sun Java Development Kit 1
Symantec Caffeine 1

SCANNERS & OCR
Apple Apple Color OneScanner 600/27 4
Hewlett-Packard ScanJet 4p 6
Microtek ScanMaker E6 6
Polaroid SprintScan 45 14
UMAX Vista-S6e 6

STORAGE
FWB HSM ToolKit, hammerCD-R 4x CD-R authoring system 8
Granite SCSIVue cables, SCSIVue terminator 8
MicroNet DataDock, DDram, SB-TMO-2600 8
Plasmon Cheetah drive, Cheetah MO jukeboxes, Cheetah Plus MO drive, PD/CD drive 8
Procom CD-R drives 8
Seagate Elite 23 8
Sony CMO-R540-10, CMO-R540-40 8

UTILITIES
Adobe Adobe File Utilities 6



MacWEEK sales offices

John Blake
Group Publisher
(617) 393-3075

Cheri L. McKeithan
Group National Sales Manager
(415) 378-5680

MarketPlace
(800) 825-4237

Display ads

Northeast [1]

Sharon Kiernan
District Sales Representative
(617) 393-3060

Heather McKee
Account Executive
(415) 378-5640

Mid-Atlantic/ Southeast [2]

Laura Mosier
District Sales Representative
(617) 393-3692

James Loza
Account Executive
(415) 378-5677

Midwest

Tom Hernandez
District Sales Manager
(312) 214-7343

Dan Hudson
Account Executive
(415) 378-5622

Northwest [3]

Ellen Skugstad
District Sales Manager
(415) 378-5657

Brigid Dombrowski
Account Executive
(415) 378-5658

South Bay [4], Nevada

Chris Marrow
District Sales Representative
(415) 378-5651

Casie Davis
Account Executive
(415) 378-5630

Southwest [5]

Dale Hansman
District Sales Manager
(310) 268-1376

[1] Includes New Brunswick, Newfoundland, Prince Edward Island, Quebec, Manitoba and Ontario, Canada

[2] Includes New York metropolitan area

[3] Includes Northern California north of San Mateo; Alaska; and Alberta and British Columbia, Canada

[4] Includes San Francisco Bay Area south of the San Mateo Bridge to San Luis Obispo

[5] Includes Southern California south of San Luis Obispo, Arizona, Utah and Colorado

Advertiser Index

Adaptive Solutions 16
Apple 7
APS Technologies 52-53
CE Software 9
Centon Electronics 32
Claris 22
ClubMac 46-47
CRA 51
DayStar 13
Deneba 83
Direct Connections 45
DirecTech 56
EarthLink Network 43
Eastman Kodak 17
Farallon 5
Focus Enhancements 82
Fujitsu 79
La Cie 48-49
LaserMaster 77
The LLB Company 54-55
Lotus Development 19
MAC Xtra 57
MacMall 81
MacSale International 67
Mega Drive Systems 40
MicroNet 84
Microsoft 10–11
MPD 64
Newer Technology 31
Nikon 15
Number Nine 34
Philips Professional 39
Power Computing 2
ProDirect 50
ProMax 8
Shreve Systems 71
Specular International 21
Symantec 33, 35, 37
Tahoe Peripherals 60
TechWorks 28
Thursby Software 20
Toray 36
Viewsonic 24-25
Xanté 23
Xinet 14

CREATIVE COMPUTERS MacMall™ YOUR MAC SUPERSOURCE!™

"The Only Catalog Every Mac™ Owner Should Have"

The Catalog(s) with the Great Deals!

MicroMac Technology

ALL Adapter Boards FREE!

68040/30 Mac™ II Series Accelerators

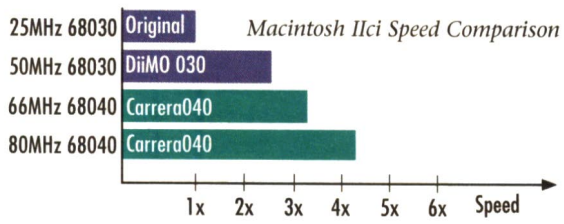
Select the Price/Performance for Your Needs

68040 from $299

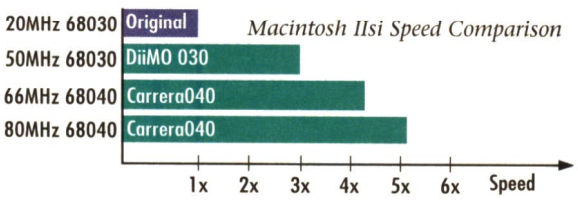
MicroMac introduces the 66/33MHz or 80/40MHz 68040 Carrera accelerator for the Macintosh IIci, IIsi, IIcx & IIx with optional FPU and 128KB cache card.

68030 from $199

MicroMac offers the raw computing power of the DiiMO 030 accelerator for your Macintosh® II, SE/30, LCIII, IIci (IIvx, IIvi, Performa® 600), IIsi, IIcx or IIx. With a 50MHz 68030 CPU, 64K RAM Cache and optional 50MHz FPU.



Macintosh IIci Speed Comparison



Macintosh IIsi Speed Comparison

Macintosh LCIII Speed Comparison

Macintosh IIci	w/o FPU	Order #	w/FPU	Order #
DiiMO 030 50MHz 68030	$199.99	# 79095	$249.99	# 79096
Carrera040 66/33MHz 68040	299.99	# 73306	399.99	# 73307
Carrera040 80/40MHz 68040	499.99	# 73308	599.99	# 73309
CarreraTurbo 128KB Cache Card*	99.99	# 73322		

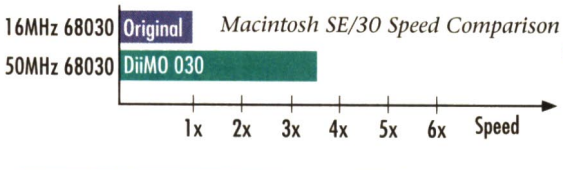
Macintosh IIsi	w/o FPU	Order #	w/FPU	Order #
DiiMO 030 50MHz 68030	$199.99	# 79097	$249.99	# 79098
Carrera040 66/33MHz 68040	299.99	# 73310	399.99	# 73311
Carrera040 80/40MHz 68040	499.99	# 73312	599.99	# 73313
CarreraTurbo 128KB Cache Card*	99.99	# 73322		

Macintosh LCIII	w/o FPU	Order #	w/FPU	Order #
DiiMO 030 50MHz 68030	$199.99	# 79087	$249.99	# 79088

Macintosh SE/30	w/o FPU	Order #	w/FPU	Order #
DiiMO 030 50MHz 68030	$249.99	# 79089	$299.99	# 79090

Macintosh II	w/o FPU	Order #	w/FPU	Order #
Marathon 32MHz 68030	$99.99	# 79091	$149.99	# 79092
DiiMO 030 50MHz 68030	249.99	# 79093	299.99	# 79094

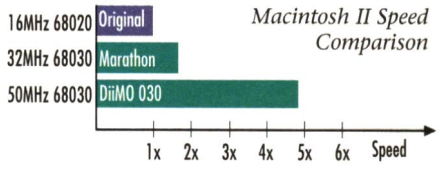
**Also available for the Macintosh® IIcx & IIx*



Macintosh SE/30 Speed Comparison

68030 from $99

The MicroMac Marathon accelerator offers economical processing power for your Macintosh II. With a 32MHz 68030 processor and optional 32MHz FPU.



Macintosh II Speed Comparison

68040/030 LC and LCII Accelerators...Break the 10MB Barrier!

68030 from $99

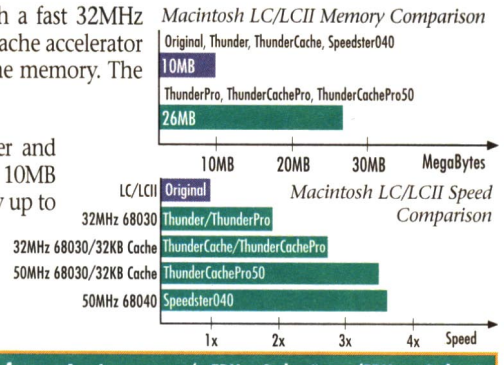
MicroMac's Thunder accelerator boost the performance of your LC or LCII with a fast 32MHz 68030 CPU. This entry level model comes with an FPU. The MicroMac Thunder Cache accelerator combines the pure speed of the 32MHz 68030 CPU with an ultra-fast 32KB Cache memory. The optional 32MHz FPU makes working with spreadsheets and graphics a breeze.

68030 from $199

The ThunderPro and ThunderCachePro accelerators are the same as the Thunder and ThunderCache accelerators with the addition of four SIMM slots to break the limiting 10MB RAM barrier associated with the LC and LCII. Allowing you to upgrade your memory up to 26MB. And the ThunderCachePro is available at 50MHz for even more speed.

68040 from $299

The MicroMac Speedster 040 accelerator offers impressive Quadra performance for your LC or LCII with a 50/25MHz 68040 CPU with optional FPU.



Macintosh LC/LCII Memory Comparison

Macintosh LC/LCII Speed Comparison

Macintosh LC	w/o FPU	Order #	w/FPU	Order #
Thunder 32MHz 68030			$138.99	# 69219
ThunderCache 32MHz 68030 w/32KB Cache	$199.99	# 69220	249.99	# 69221
ThunderPro 32MHz 68030 w/4 SIMMs Scks	199.99	# 69222	249.99	# 69223
ThunderCachePro 32MHz 68030 *w/32KB Cache & 4 SIMMs Scks*	249.99	# 69224	299.99	# 69225
ThunderCachePro 50MHz 68030 *w/32KB Cache & 4 SIMMs Scks*	299.99	# 69226	349.99	# 69227
Speedster040 50/25MHz 68040	299.99	# 79079	399.99	# 79080

Macintosh LCII (Performa 4xx)	w/o FPU	Order #	w/FPU	Order #
Thunder 32MHz 68030			$138.99	# 69228
ThunderCache 32MHz 68030 w/32KB Cache	$199.99	# 69229	249.99	# 69230
ThunderPro 32MHz 68030 w/4 SIMMs Scks	199.99	# 69231	249.99	# 69232
ThunderCachePro 32MHz 68030 *w/32KB Cache & 4 SIMMs Scks*	249.99	# 69233	299.99	# 69234
ThunderCachePro 50MHz 68030 *w/32KB Cache & 4 SIMMs Scks*	299.99	# 69235	349.99	# 69236
Speedster040 50/25MHz 68040	299.99	# 79083	399.99	# 79084

Some models available for the Macintosh® Color Classic

SPECIAL OF THE MONTH
100MHz COMPLETE MULTIMEDIA SYSTEM
As Low As $2049
Mac Prices Slas
$999!
$1299!
$1249!
1-800-222-2808 10:30 a.m. Tomorrow!
PLUS... WIN A BRAND-NEW PORSCHE 986/BOXSTER
Enter the Dream Machine Sweepstakes
You could win this PORSCHE BOXSTER
Call 1•800•222•2800
For Our Full Line Catalog & Get All The Details
No purchase necessary. For complete details including official rules see the MacMall catalog 57 or higher. Sweepstakes open to US residents 21 years of age or older. Void where prohibited. Car depicted is a prototype. Actual car to be awarded may vary.

GET YOUR **FREE** CATALOG(S) TODAY!

Please check the catalog(s) you wish to receive.

- ❑ MacMall
- ❑ PC Mall
- ❑ DataCom Mall

MacWeek ZMWE633

Name _____

_____

Address _____

_____

City _____

State _____ Zip _____

Mail to:
MacMall, Dept. ADV., 2645 Maricopa St., Torrance, CA 90503

We're open to take your order anytime, 24 hours a day, seven days a week.

Order toll free: 1·800·222·2808

When Microsoft talks ...

Perhaps it was Ted Kennedy — or was it J. Edgar Hoover? — who first observed that politics makes strange bedfellows. Clearly an avid student of history, the Knife avers that the same paradigm can be applied to the computer industry.

Take Apple and Microsoft. The Knife is happy to learn that, like South Korea, Apple is again scrambling to come to terms with its *bête noire* to the north.

According to sources the Knife has posted along the DMZ between Cupertino and Redmond, Apple has agreed to freeze some Copland APIs to ensure its new OS' compatibility with the Microsoft Office upgrade due to go beta in May. While stopping development on the software at this early stage may put a crimp in Copland's style, it's either that or break the suite when the OS ships.

Longtime Mac developers may derive a Proustian frisson of déjà vu from these machinations: The original Mac OS was also burdened with a bolus of special code, mandated by Microsoft, that developers were forced to work around until System 7.

While acknowledging Microsoft's aptitude for pressure politics, the Knife is reassured that Gates & Co. have yet to develop a viable nuclear arsenal, at least according to independent U.N. observers.

Nevertheless, even the industry's most feared warlord must sometimes make a few concessions to the PowerPC bloc. The Knife's database devotees report that the beta version of Microsoft's Visual Fox Pro for the Mac kicks tush on its Windows counterpart. In fact, the pre-release Power Mac software on an 8500/120 executes more than twice as fast as its opposite number running on a 200-MHz Pentium chip.

Beast with two backs

Meanwhile, Power Mac users will soon get a chance to conduct their own head-to-head research into the relative merits of Motorola RISC vs. Intel ÜberCISC, thanks to the Power Mac 7200/120 PC Compatible, coming soon to a desktop near you.

According to the Knife's fellow travelers, that's the name of Apple's forthcoming Pentium-equipped Power Mac, which the company has been touting at trade shows for months now. New twist on the Jekyll-and-Hyde scenario: The new box may include a 120-MHz Pentium instead of the 100-MHz version originally on the drafting table.

Radius reanimates

While two shares of its stock still couldn't buy you a Happy Meal at McDonald's, Radius has not yet thrown in the towel. In fact, it seems to be fulminating a Rocky-style comeback, as evidenced by the Radius Thunder 3D board, a forthcoming Quick-Draw 3D accelerator from the not-quite-moribund manufacturer.

The 30-bit-color, 30-frame-per-second board will start at about $4,500 for a configuration with 8 Mbytes of video RAM; a higher-end model will have 48 Mbytes of VRAM, and both will have 16 Mbytes of dynamic RAM.

The Knife's minions are pleased to report that the board's performance bears no resemblance to Radius' recent sales figures; in short, it's a screamer.

Biosphere III

Netscape's stock has also taken a bit of a beating lately, but the bad news has apparently not dampened the Web-spinner's insufferably trendy attitude. Word out of Mountain View is that the in-house rank-and-file are required to refer to the company's Navigator software as an "environment," *not* a browser. Transgressors are compelled to purchase common stock at its peak price of $83 per share. (The going rate for a share of Netscape is half that.) □

Brighten up your *environment with a stupid-fresh MacWEEK mug! A tip is all it takes. Call (415) 243-3544; fax (415) 243-3651; mac_the_knife@macweek.com.*

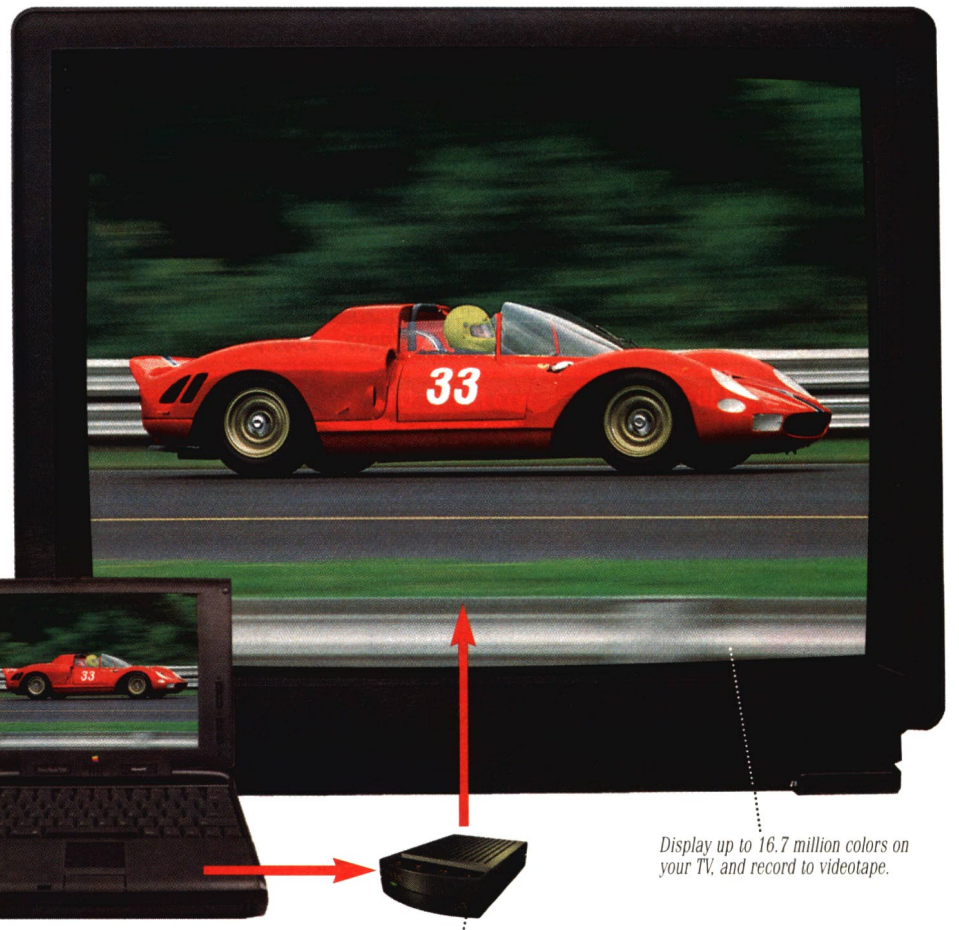
The Most Popular Presentation System Leaves Others In The Dust

In Showrooms Everywhere

We've made the best presentation technology – FOCUS L•TV – even better. The new L•TV Micro, at only 7 ounces, is the smallest, most powerful presentation system ever offered at this incredible value.

The L•TV Micro connects your desktop Macintosh or PowerBook to any size television for business presentations, classroom teaching, training sessions, game playing or group viewing of spreadsheets or Internet information. Your audience can see a crisp image, take notes and ask questions with the room lights on. Even on a big screen TV, the L•TV Micro brings them a sharp, stable picture thanks to our SuperStabilize™ and Flicker-Free software.

Four new microtouch buttons let you manipulate the position of the computer image on the TV screen so that full windows, toolbars and other functions display exactly how you – and your audience – need to see them.


33
Display up to 16.7 million colors on your TV, and record to videotape.
Plug-and-play desktop or PowerBook Macs
The L•TV Micro is a new sub-compact with great features under the hood.
FOCUS
L-TV

Also, use the L•TV Micro to connect a VCR and record directly to tape. It's the easy, inexpensive way to tape your slide show, product demo or multimedia production. At trade shows you can set the L•TV micro to display only on the TV, or connect a multi-scan or VGA monitor for simultaneous dual screen displays.

Every L•TV Micro includes our proprietary software, built-in RCA, and S-Video connectors, along with all necessary cables.

Ladies and gentlemen, start your presentations!

Only $149.99

Call for more information or the reseller nearest you.

Call for a free product guide

800-538-6000

FOCUS enhancements
networking • graphics • software

INGRAM MICRO · COMPUTER ATTIC · The Mac Zone · J&R COMPUTER WORLD · Computer Town · MacWAREHOUSE

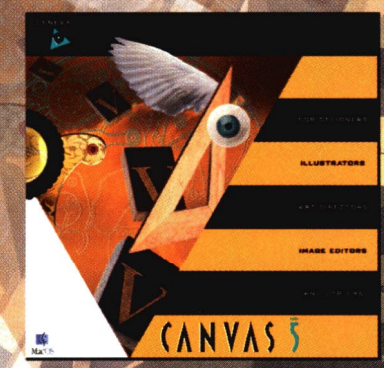
DENEBA

THIS SPRING WHEN CANVAS™5 SELLS FOR $599 YOU'LL FEEL LIKE A FOOL FOR NOT READING THIS AD.

"Canvas 5 adds a host of new capabilities that make it far more than the solid illustration player it is today. Deneba's far-reaching upgrade to Canvas is a shrewd marketing move. For about $600, you get many of the functions that would cost almost $2,000 if you stock-piled Adobe Systems Inc's Photoshop, Illustrator and Pagemaker."
Mark Hall
Editor in Chief
Macweek
July 24, 1995

"Canvas 5 sports a sleek interface that packs the power of numerous programs without confusing the user...Canvas equals Adobe Illustrator and Macromedia FreeHand ... Although it doesn't offer all the bells and whistles of Adobe Photoshop, it does support a fairly complete array of tools for image editing, including masking."
Sean J. Safreed
Senior Graphics Editor
MacUser Magazine
October, 1995

"Canvas 5, what a product! Image editing, page layout, presentation and tech illustration wrapped into one easy to use interface. This is the true Swiss Army knife of any graphics applications out there. Deneba has done everything the graphics community has asked for."
Keith Boncek
Director of Computing
Cornell University
August, 1995



THE BEST OF
ILLUSTRATOR™
FREEHAND™
QUARKXPRESS™
& PHOTOSHOP™

THE OFFER Time's running out. The instant Canvas 5 starts shipping, this offer will be history, and you'll either be feeling very smug or very foolish. Right now, you can buy the most complete all-around graphics program (Canvas 3.5) for as little as $149* and get a free upgrade to an even better one (Canvas 5) when it ships this spring.

THE PROGRAM Already, Canvas 5 has received rave editorial coverage and awards including last year's "COMDEX Fall/Byte Magazine Best of Show Award." Canvas 5 combines all the major functions of Illustrator, QuarkXPress and Photoshop. It gives you all the tools you need for illustration and page design, typography and publishing, photo design and image editing. Canvas is the only program that takes you from rough layouts all the way through to illustration, retouching, color separations and pre-press.

THE TEST I'm so smart I...

1. Bought Netscape stock last year at $29 (now trading at $150).
2. Recognized that Picasso in the garage sale for $100 (it was last auctioned at $50 million).
3. Bought Canvas at $149 and got a free upgrade (saved thousands).

Well, it's too bad about 1 & 2, but it's not too late for 3.

1.800.6.CANVAS Just call. Surfing the Internet? Be sure to visit us at http://www.deneba.com.

SEYBOLD EDITORS' HOT PICKS 95

BEST OF BYTE COMDEX FALL '95
WINNER
Best Application Software

CANVAS VERSION 5

IT'S WHAT THEY'LL THINK OF NEXT

Mac OS

*Canvas 3.5 SRP is $399, but for a limited time, if you already own a graphics program, you can trade it in for Canvas for only $149, and still qualify for a free upgrade to Canvas 5. Just call 1.800.6.CANVAS to order. © 1996 Deneba Software, 7400 S.W. 87th Avenue, Miami, FL 33173. Phone: (305) 596-5644. Fax: (305) 273-9069. Canvas is a trademark of Deneba Systems, Inc. Illustrator and Photoshop are trade-marks of Adobe Systems, Inc. FreeHand is a trademark of Macromedia, Inc. QuarkXPress is a trademark of Quark, Inc. All other trademarks and registered trademarks are the property of their respective holders.

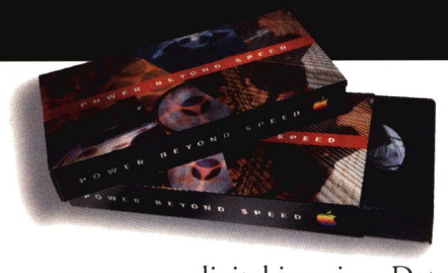
DENEBA

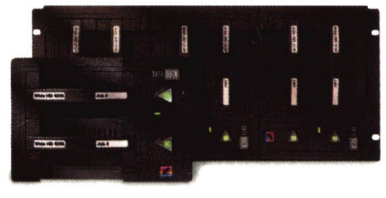
SEE US AT NAB BOOTH S2626

RAZZA DIGITAL FOUND THE PERFECT HIGH PERFORMANCE VEHICLE FOR MOVING APPLE®.

Using DataDock™, Razza Digital was able to save countless hours moving Apple's® video files between graphics, editing and audio suites.

Whether you're transferring gigabytes of uncompressed video files from bay to bay, shelving a job in progress or archiving the largest project of the year, there's nothing like DataDock. It offers unlimited scalability, superior performance and unsurpassed configuration flexibility. So, whether you're into video publishing, prepress or digital imaging, DataDock is the ideal storage solution. *MacUser* magazine selected DataDock as a "Best Buy", we think you will as well. Call 800-800-DISK to get your digital studio or other data intensive storage application on the right track.





DataDock is available in black (shown) and platinum. Numerous configurations are available. It is fully compatible with Mac O/S®, Windows® and Windows NT®. Our sharable CD-R, DAT, MO, SyQuest® and Jaz® modules expand your workstation flexibility.

MicroNet

MicroNet Technology, Inc., Irvine, California (714) 453-6100, http://www.micronet.com In Canada: (800) 265-7109

All Trademarks, Registered Trademarks and Logos are of their respective holders. Available on GSA schedule, call 800-800-DISK or send e-mail to GSAINFO@micronet.com
Screen images courtesy of Razza Digital and Apple Computer, Inc.